





Class _____

Book _____





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when Bachelor of Arts in Trinity College, Cambridge.

Engraved by J. Wedgwood, from the Original Picture

Painted by Sir Peter Lely, in the possession of
The Right Honorable Lord Viscount Cromorne

THE
G L O R Y
OF
T H E H E A V E N S;
OR,
REFLECTIONS ON THE ANALOGY
BETWEEN THE
WORKS AND WORD OF GOD.

BY THOMAS BASELEY, M. A.

For the invisible things of God from the creation of the world are clearly seen, being understood by the things that are made, even his eternal power and Godhead.

ST. PAUL.

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CORRECTED AND ENLARGED.

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PREFACE.

THIS little performance has no other claim to public favour than being an humble attempt to illustrate some of the sublimest phenomena of Nature, by the light of Revelation ; and to shew, that Religion and Philosophy have a closer relation to each other than the generality of mankind seem willing to allow.

It is a fatal mistake, and it is one which has been too much encouraged by persons who profess themselves friends to Literature, that in proportion as human knowledge is extended, the Sacred Writings become obscure, and perplexed with difficulties.

To counteract this error, and to confirm the declarations of Scripture by the discove-

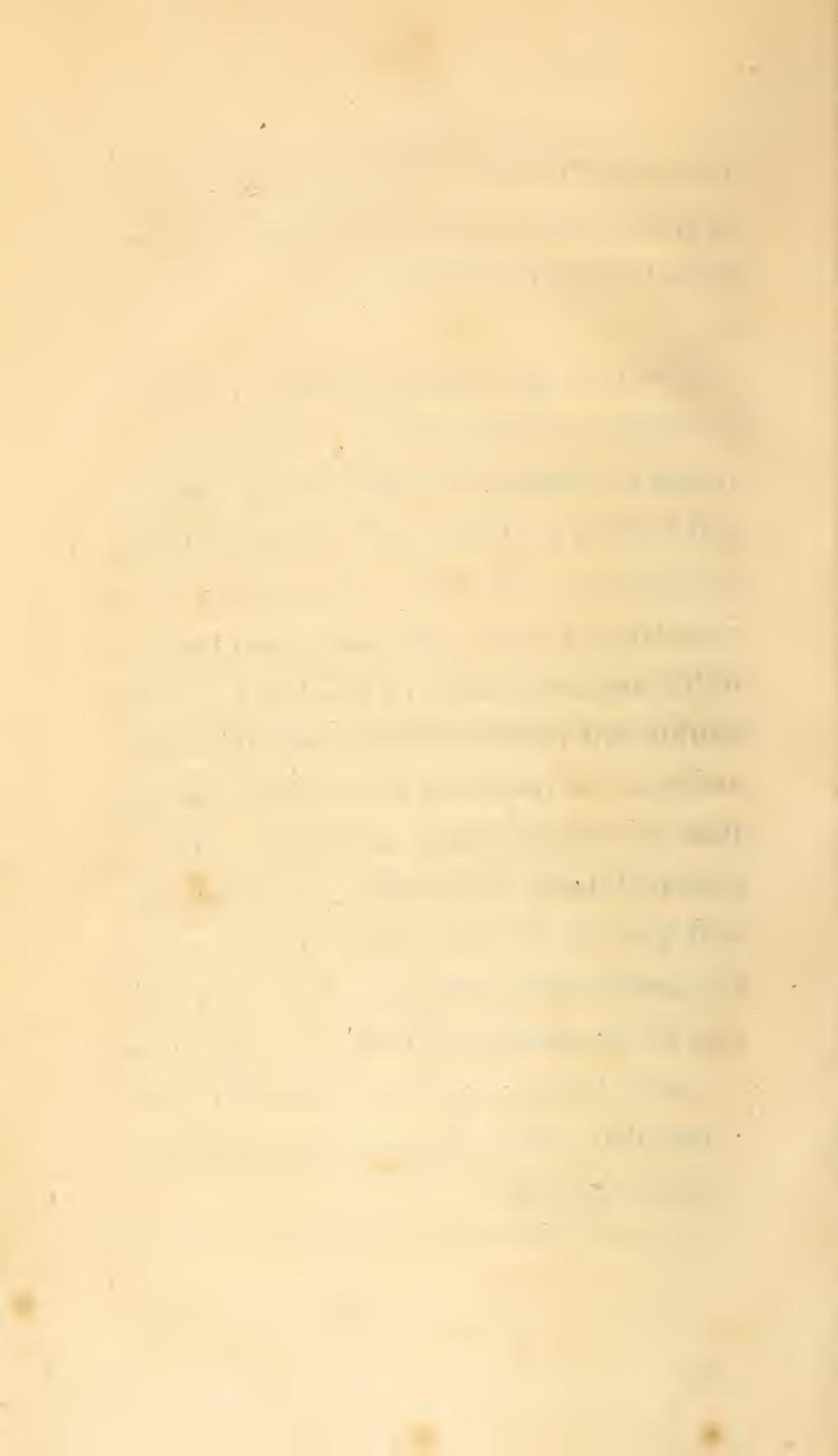
ries of modern Science, must be a work of considerable importance to the best interests of society; and though the present humble Essay has certainly no pretensions to the character of a systematic view of the subject, it may serve, in a low degree, to aid the contemplative mind, while engaged in meditating on the Works and in reading the Word of God.

Timid piety has been often afraid to admit the conclusions of astronomical observation; and though the voice of Inspiration has pronounced, that the “Heavens declare the “glory of God, and that the firmament “sheweth his handy work,” many religious minds have been induced, from a narrow consideration of the Mosaic Cosmogony, to deny a plurality of worlds.

Infidels, on the other hand, have endeavoured to invalidate the Sacred History, on

the ground that the account which it gives of the origin and constitution of the universe, is contrary to experience.

Now that the timidity of the one, and the presumption of the other, are alike unwarranted by the spirit of the Heavenly Oracles, and even by the letter too, when thoroughly examined and compared, must prove a great consolation to those who make them the rule of life and the comfort of the heart. Their doubts will vanish when they see Philosophy acting as the handmaid of Religion, and find that the improvements of Science serve as powerful helps to devotion. Hereby they will also be enabled effectually to confute the cavils of the gainsayer, while, in pursuance of the apostolical direction, they “are “ready always to give an answer to every “man that asketh them a reason of the hope “that is in them.”



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THE GLORY
OF
THE HEAVENS.

GOD.

—all things speak of God ; but in the small
Men trace out Him ; in great, he seizes Man !

YOUNG.

ON entering a gallery of original painting, figures wonderfully excellent strike us with powerful attraction. Every person of taste and sensibility perceives instantaneously their paramount distinction ; and the first emotion produced thereby in well-informed minds, is some degree of

solicitude about the author; for nothing has so direct a reference to its cause, as merit of every description. Much laudable ingenuity is displayed in discriminating the different masters, ascertaining their respective eminence, pointing out the specific characteristics of the several schools to which they belonged; the amateurs under whose auspices they studied, the correctness of their designs, their colouring, and their costume. In all this minute investigation, what should we think of the critic or connoisseur, who could gravely allege, that all the diversified apparatus around us originates in no cause, that not one of these masterly pictures is the work of any artist whatever, and that the whole resulted not from intelligence or design, but from blind impulse and lawless chance? So, they who survey the magnificent machinery of Nature, and more especially the won-

derful phenomena of the skies, and yet can harbour a doubt of the invisible Creator, or indeed are not impressed, wherever their eyes wander; or their meditations rest, with a deep sense of an ever-present God, either have not the faculty of reason, or pervert it to gratify their passions, or to strengthen their impiety.

The hopes and fears which alternately expand and depress the human heart, evince our connexion with another state of being, and that our destiny is not confined to the narrow precincts of mortality. This material existence seems to be only in order to ONE, spiritual, invisible, and immortal. Our present condition is not stationary, or in a circle, but is obviously progressive; it begins, indeed, amidst the manifold frailties of flesh and blood, but terminates in the consummations of a world to come.

Nature and mankind coincide, as they ever have done, in recognising, establishing, and avowing, this great primary, fundamental, and general fact. It results from the well-known analogies of the former, accords with the universal convictions and practice of the latter, and is the only key by which the mechanism and tendency of our system can be satisfactorily explained, or adapted to rational comprehension. The most untutored of the species is more or less conscious of a principle, an impulse or a power within him, which occasionally lifts him above the sphere of his senses, and by which he endeavours to solve the phenomena, both above and about him, in a way the most obvious to his understanding and his senses. The pageantry of the Indian's idolatry, gross and sordid as it may appear to more enlightened minds, is as much an object of reverence to him, as

our religious institutions are to us. He cannot perhaps explain the sentiment he indulges, defend the preference which imposes on his credulity, ascertain the intention for which Nature stamps these impressions on his heart, or even perceive by what ministry, or through what medium, he receives the intimation of any being or beings superior to himself. But notwithstanding this want of acuteness and refinement, his pious regards and devout aspirations may be more genuine, sincere, and acceptable, than those of the philosopher, with all his acquirements and advantages. While in the act of doing homage to the sun, the moon, and the stars, whom he considers as the great source of all his blessings and enjoyments. his gratitude may be as pure as that of the cloistered recluse, the visionary enthusiast, or the reasoner who resolves all religion

into speculation. The piety of Nature's untutored child, indeed, has this in its favour, that he adores the effect only, by a mistaken substitution of it for the cause. But our habitual inattention to the one, indicates a criminal indifference to the other. He would do his duty, but he is ignorant of its nature; we know ours, but leave it undone.

It is a maxim founded in experience, and the history of the species, that in no state of the human intellect, improved or unimproved, is it ever maturely disposed, ultimately at least, to rest in present appearances. The highest eminence of science man ascends, another still higher catches his eye, and tempts his pursuits.

Hope springs eternal in the human breast;

Man never is, but always to be blest.

Unlike the tortoise, fastened to its native shell, or the beaver and other animals, which are under the sole direction of impulse or instinct, though often approximating to something resembling reason or science, it is his nature and habit to go forward ; and whatever his situation or attainments may be, to improve both the one and the other.

There is a propensity or spirit in all our motions and exertions, which bears an affinity to a higher system, which is not in unison with any known properties of matter, and which abstracting our affections from things evanescent and momentary, is continually propelling them to such as are superior and invisible.

For these last, unless when perverted by prejudice, passion, or vice, our natures

discover a decided preference. All the flagitious superstitions whose sanguinary edicts blacken our records, as well as all that bright assemblage of intelligence, which has so often, and in so many ways illuminated human life, have been generated by this prolific faculty. Here we trace the primary dawnings of that meridian splendour, by which the sun of science hath in many different and distant ages and countries, enlightened and distinguished so many nations. This points through all the various combinations of matter, one pervading mind, and is the great index which deciphers the minutest figure on the dial-plate of the universe, and at the same time acquaints more or less all its intelligent inhabitants with his nature and perfections, who made them, and by whom they are governed. By a turn for investigation thus natural, and

for the most part unavoidable in such circumstances, and connected with such dispositions as ours, whatever excites attention or occasions observation, stimulates inquiry, and is the means of improving our knowledge of the Deity. He is known by his works, as certainly as any human artist can be by his. These are uniformly pregnant with the most important information concerning him. From them we learn much of his character, and many of his perfections. They are universal, intelligible, and unequivocal documents of who he is, what he can do, and the relation in which he stands, as well to us as to them. And here his attributes, his intentions, his energies, and the whole character of his divine government, are every where so legible, that he who runs, may read his power, wisdom, and goodness.

It has, indeed, been much and plausibly questioned, whether the discovery of one supreme intelligent cause of all things, be the induction of reason or the result of instruction. But the chief considerations on which the solution turns, are now so completely involved, and run into each other so intimately, that it may not perhaps be easy to say on which side the truth lies. Fortunately the decision, however curious from its intricacy it may be supposed, becomes the less important, since we are actually put in possession of a clue, which happily frees our minds from all the difficulties and embarrassments into which ignorance and temerity had plunged them, establishes the reality of the divine existence, by leading us to the fountain-head of all true knowledge, and by the guidance of which we can be no longer at any loss to account for any phenomena otherwise inexplicable.

The material world has in consequence emerged from the palpable darkness in which it was involved, and presents us with a striking image of its Maker, by the light reflected from that which is invisible. We henceforth regard it as a theatre on which the agency and attributes of the Almighty are conspicuously displayed, and by the simple medium of which, he holds uninterrupted correspondence with the whole of his family, in all the various ways of which they are capable. Nature thus interpreted, is susceptible but of one construction. Her language, always simple and direct, is every where the same; and there is no nation or country on earth unfurnished with those means, by which it may be equally and clearly understood.

This we call the theology of Nature, as

the elements of it, at least, are perspicuously detailed in her works. Whatever we know of the Divinity, apart from the positive instructions he vouchsafes, is from the contrivance and design manifested in systems with which we are acquainted, the disposition and motions of the heavenly bodies, the nature of the planet we inhabit, the process of the vegetable world, and the animal organization or mechanism.

What are these, separate or combined, but an expressive picture of their Author? and the more they are considered and comprehended, his power, wisdom, and benignity will be better understood, and be more illustrious and impressive. It is the steady and solid conviction that he is, and that his attention to the greatest and best of his creatures is unmerited, which constitutes the basis of our hopes, and gives

beauty, harmony, and interest, to the universe. Take him out of it, and chaos comes again ; but replace him at its head, where from everlasting to everlasting he is God, then Nature resumes her sweetness, and all Creation smiles with joy. How majestic and sublime is the poet's conception !

I saw, when at his word, this formless mass,
The world's material mould, came to a heap ;
Confusion heard his voice, and wild uproar stood rul'd !

MILTON.

Reader ! hast thou ever conceived what an appearance Nature would make, abandoned to the mere impulse of matter ? Clouds obedient to the laws of gravity, would fall perpendicularly upon the earth, and we should soon find our atmosphere too dense or too rarefied for the organs of respiration. The moon, either too near or too distant, would be alternately visible and invisible, look bloody, and covered with

enormous spots, or alone fill the whole celestial concave with her disproportionate orb. Seized, as it were, with a sort of frenzy, she would rush along an uninterrupted line of eclipse, or rolling from side to side, expose the other face, which the earth has never yet beheld. The stars would appear under the influence of the same caprice, and nothing be seen but a succession of preposterous and tremendous conjunctions. One of the summer signs would suddenly be overtaken by one of the signs of winter ; and the Lion would roar in Aquarius. Here, the stars would dart along with the rapidity of lightning ; there, be suspended motionless: now crouching together in groups, they would form new galaxies, and then disappearing at once, and rending the curtains of the world, expose to view the secrets of Nature and the abysses of Eternity.

Nothing but the Almighty's presence preserves all the parts of Creation in union, and gives energy and effect to that mysterious agency which connects, consolidates, and binds them into one vast comprehensive whole. It is the strength of his unseen arm which hangs them upon nothing, and by which they perpetually circulate as on invisible springs. His power protects and upholds them in their respective situations, and enables them to sustain their relations with propriety. It is by the breath of his mouth the whole beautiful assemblage of shining worlds exists, and when he withdraws it, they are extinct. What then is the spacious and magnificent Creation, but an expressive and majestic representation of his infinite power and exuberant love, who surveyed every thing that he had made with complacency, and behold it was very good?

Is not immeasurable space crowded with columns to the honour of the Divine Artist? These are one and all inscribed to his name, illustrate the excellence of his perfection, and perpetuate his praise. The vast canopy of Heaven may be considered more particularly as an immense area, where the matchless wonders of his skill and contrivance mark an eternal exhibition, through all their spheres and evolutions, before an intelligent and astonished universe. A variety of worlds, exceeding all comprehension in number and magnitude, in which our terrestrial globe is but an atom, are stationary in their order, destiny, and rotation. When, therefore, we seriously reflect how the Creator of all things, hath placed and balanced our earth in the midst of the air, and the universe, as it were, in the midst of nothing; how he hath hung for so many important uses

these glorious lights of Heaven, the sun, the moon, and the stars, and made paths in the sky for their courses;—instituted the regular circle of the seasons, summer and winter, seed-time and harvest;—how he hath stocked our earth with inhabitants, and rendered it fertile for their sustenance and accommodation; and laid the sea in heaps, that though it may overlook, yet cannot overflow the land;—who can possibly doubt the exceeding greatness of his power, the infinite resources of his wisdom, the plenitude of his goodness, and the bounty of his providence?

The following lines present us with such a picturesque view of the celestial regions, so often alluded to in these pages, that it were unpardonable to omit them.

So late descried by Herschel's piercing sight,
Hang the bright squadrons of the twinkling night ;
Ten thousand marshall'd stars, or silver zone,
Effuse their blended lustres round her throne ;
Suns call to suns, in lucid clouds conspire,
And light exterior skies with golden fire ;
Resistless rolls th' illimitable sphere,
And one great circle forms th' unmeasur'd year.

By the late convulsions in the political and moral world, reserved for these last times, the minds of men, for the most part, have been strangely staggered and confounded. All that is respectable in society, venerable in virtue, or interesting in religion, are now avowedly violated ! An evil spirit of atheistical bigotry, dashed with a temerity indicating more or less of mental derangement, command a most unaccountable ascendancy, even in popular opinion. Dogmas and paradoxes, which our forefathers treated with indignity and abhorrence, are actually become the creed of the vulgar ! It is the monstrous spawn

of a philosophy, the opprobrium of modern literature and science, and the pitiful engine by which infidelity and impiety would exterminate divine revelation. These blasphemous agents of reform, like the fabled giants of old, would scale the Heavens, and at one blow annihilate the whole spiritual world!

Their maxim is, to credit nothing beyond their senses, without either calculating the magnitude of what challenges assent, or the extent even of our sensible faculties. All Nature is to them an inexplicable enigma, and they insist on plunging into this unfathomable abyss without interruption!

This pestilent infatuation hath seized the lowest as well as the highest, and reduces the ignorant and enlightened, the clown

and philosopher, to one sordid and ignoble level ; and they who formerly shrunk from the requisitions of piety only, and derided revelation as priestcraft, with vulgar wit, can now boldly ridicule even the belief of a God, deride the sanctions of conscience, and laugh at the idea of a world to come !

This unmanly dereliction of principle, and base apostacy from the religion of our country, hath roused, as might well have been expected, in its defence, some of the ablest champions of truth. Among the last and best efforts of this nature, are Dr. Paley's Natural Theology [a], and the Bamptonian Lectures of the Rev. Edward Nares [b]. With these strong barriers or ramparts against the tide of irreligion, which now rages at its height, and furiously assaults whatever is sacred,

we would establish such mounds and embankments as may repel its accumulated violence; and we know not, in detecting, opposing, and defeating the adversaries of our faith, where to take our stand on firmer ground, than on the same well-constructed, solid, and deep foundation.

To give science its proper direction, and to lead the attentive observer through Nature up to Nature's God, is the object of these humble pages. Perhaps no better apology can be assigned for prefixing such a pompous title to a work so insignificant, than that our language affords no word more appropriate to the Author's conception of his own design; and no one can regret more sincerely than he does, that his object is not more happily and completely executed. He confides in the candour of his readers to forgive the imper-

fections of his honest labours for their improvement, and he hopes they will accept his best wishes, that what is meant well, may be well received, and that his weak endeavours to serve them may not only please, but profit.

MAN.

For the heaven's wide circuit, let it speak
The Maker's high magnificence, who built
So spacious, and his line stretch'd out so far,
That man may know he dwells not in his own ;
An edifice too large for him to fill,
Lodg'd in a small partition ; and the rest
Ordain'd for uses to his Lord best known.

MILTON.

IN the whole compass of human intelligence, there is nothing more curious and interesting than the history of man. Among animals who surround him, of the same origin with himself, and partakers of the same elements, who live by the same means, and make a similar exit, he stands

alone, unclassed and almost undefined. Whether in society or solitude, he is uniformly the first figure and principal actor in the scene. In every post he fills, and situation he sustains, the qualities he displays, and the duties he performs, connect him with the future as well as with the present; and though he *comes up and is cut down like a flower*, he has something in him, that will certainly remain when this earth is destroyed, and when the sun and moon themselves are extinct. His make, both in mind and body, appears to our limited comprehension a mass of contradiction; his genius as volatile and eccentric as the lightning, and its flashes oftentimes as fatal and vivid. His intellect, fitted to dissect a gnat, or analyse a cobweb, would fain grasp immensity at the same time, and stretch into the unfathomable abyss of Eternity. His passions, which are to him as

wind to a ship, by turns rise and fall, accumulate and subside, like the gusts of a hurricane. His reason, though it acts the part of a pilot at the helm, is never so apt to sleep as when the sea swells, the storm rages, and the vessel drifts with every current; and his heart, habitually duped by his senses, is alternately soft as wax and hard as flint.

Plac'd on this isthmus of a middle state,
 A being darkly wise and rudely great,
 With too much knowledge for the sceptic side,
 With too much greatness for the stoic's pride,
 He hangs between, in doubt to act or rest ;
 In doubt to deem himself a god or beast ;
 In doubt his mind or body to prefer,
 Born but to die, and reas'ning but to err ;
 Alike in ignorance, his reason such,
 Whether he thinks too little or too much.
 Chaos of thought and passion all confus'd,
 Still by himself abus'd or disabus'd :
 Created, half to rise and half to fall,
 Great lord of all things, yet a prey to all :
 Sole judge of truth, in endless ruin hurl'd ;
 The glory, jest, and riddle, of the world !

This anomalous and versatile creature is feigned, in the dreams of the poets and fabulists, as originally fondled in Nature's lap, and pampered by all her luxuries. On his birth she smiled auspicious, and all her energies shed benign influence upon him. He was nursed in her bosom, carried in her arms, dandled on her knee, slept on a bed of roses, and wherever he went, a profusion of flowers strewed his path, and every thing smiled around him in beauty and gaiety !

all Heaven

And happy constellations, at that hour,
 Shed their selectest influence ; the earth
 Gave signs of gratulation, and each hill ;
 Joyous the birds ; fresh gales and gentle airs
 Whisper'd it to the woods, and from their wings
 Flung rose, flung odours, from the spicy shrubs !

MILTON.

His infancy, wrapt in this soft elysium,
 passed away in scenes of innocence and fes-

tivity ; and as he grew in stature, he increased in intellect. Sensual gratification and corporeal exercise probably occupied his youth. Here was no lawless eccentricity ! no unhallowed fermentation ! no sordid pursuit ! no sinister bias ! no low design ! no vicious temerity ! His chief enjoyment then consisted in scaling the mountain's craggy front, chasing the game in the plains, traversing the forest, climbing the trees, searching the rivers for provision, and preferring whatever shelter chance afforded him for repose [c].

This properly introduced him to a life of nature, and gave him all the ingenuity, hardihood, and agility, his situation required, and made him acquainted with the objects and scenes among which he was destined to pass the remainder of his days. His contemplations were inter-

rupted by no intrusion, but from the natural recurrence of appetite ; and present competence precluded all solicitude for futurity. He acquired no property but the herds he rescued from the wilds in which they roamed ; he had no employment, but to watch and preserve them from the beasts of prey ; and his care for their sustenance was the less, as their pasturage was unlimited. In such a state of plenty and tranquillity, all the implements of his industry were a shepherd's crook, his staff, and his dog ; all his stock in trade were a few animals ; and his capital, the waste or common on which they fed. Thus, hermit-like,

The moss his bed, the cave his humble cell,
His food the fruit, his drink the crystal well ;
Remote from man, with God he past his days,
Prayer all his bus'ness, all his pleasure praise.

PARNELL.

His felicity, thus circumstanced, was a conjunction of nature, innocence, and simplicity. These gracious qualities hallowed the very ground on which he trod, and converted the face of the whole Creation into one holy and lively transcript of Heaven ! All his enjoyments he received with humility, appropriated them to the service and honour of the bounteous Donor, and repaid them, with gratitude, in the dutiful acknowledgment of willing obedience.

But this bower of fruition, the mere fabric of a voluptuous imagination, was soon demolished. Art interfered, and Nature was no more ! The outline of man's life was of course reversed. He fell at his birth into the rugged arms of adversity, who never forsook him indeed, but never indulged him in any after stage of existence. He was allowed little or no sunshine,

but was placed on the shadowy and bleak side of the hill. Affliction became his nurse, necessity his tutor, and suffering his companion, all the days of his life. Immured while young with multitudes in cities and schools, corruption crept into all his habits, disease debilitated his body, sensuality debased his affections, and science, or philosophy falsely so called, perverted his mind.

Early alienated from Nature, and depraved by fastidious refinement, he grew blind to her beauties, and insensible of her charms; exchanged simplicity for prudery, wisdom for folly, reality for fiction, and the golden for the iron age! Ignorance, distortion, and imposture, quickly pervaded the universe! Every thing became misplaced, disfigured, and disjointed; Imagination sickened at the sight, and hu-

man invention teemed with monsters. Nature, contemplated under such a bias, grew frightful, deformed and forbidding! It was the ruin of innocence, which reduced the works of the Almighty to this direful wreck. Our revolt from the Maker and Father of existence, operated like a blight on his offspring, and seized the whole Creation with a kind of paralytic stroke! Nature felt the shock at her heart! It withered the bloom which had adorned her countenance; clouded the beauties that wantoned in her bosom, and cast a pale and deadly hue over all her sweetest features!

Under a similar apathy or perversion of moral perception, we still walk through her finest groves, occupy her loveliest retreats, and behold her most voluptuous scenery, like one without taste or skill, in galleries

of exquisite paintings, the deaf in an orchestra of ravishing music, or the blind in a galaxy of beauty !

It was now that the knowledge of one supreme intelligent Author of all things, burst upon the world, lost and bewildered in impiety and delusion as it was, like the meridian sun through a murky hemisphere ! The human faculties became gradually illuminated by the splendour which then blazed around them !

This was a new epoch in the history of our nature ! and the mind of Man gained fresh ardour, or acquired an additional spring, from its influence. His taste and affections experienced, more or less, a change, from sense to sentiment, from animal to mental predilection, and from mere organic to rational existence.

Impressed by information thus supernatural and divine, as a moral and thinking creature, he would intuitively pause, and endeavour to recollect where he was, or why placed in a scene equally pregnant with the profoundest mystery and the sublimest wisdom. The candid pursuits of indefatigable diligence and modest inquiry after truth and duty, are seldom disappointed. They are means of knowledge which Nature herself hath ordained, and like all her other institutions, are equally clear and simple. Thus conjecturing the objects every where presented to their ingenuity and construction, to be the necessary effects of an unseen, but all-wise contrivance, men gradually perceived themselves, by progressive intelligence and mature experience, to be the image of the invisible God, and the offspring of the same parent, and members of the same family.

This was the patriarchal system, which combined more piety, science, and philosophy, perhaps, than any subsequent system. The patriarchs were a kind of independent princes, who presided in their own families, as the fathers and rulers of them, by hereditary and paternal right, and they were probably more eminent and respectable for their wisdom than wealth. Having no imperious interest to entangle them with secular affairs, or to rivet them to the earth, their minds were at liberty to expatiate on all the spectacles of curiosity and objects of sense within their reach. Indeed, all the intelligence they had, and all the art they knew, were probably employed, not so much in accelerating the civilities of society, as in acquainting themselves with Nature, and in mastering her secrets [*d*]. Whatever they saw, heard, or touched, became to them, animated as they must have then been with an

eager aptitude for knowledge, and excitement to investigation; and they regarded the works of Creation with sentiments of amazement, and in some instances of adoration, in proportion to the novelty, the splendour, and the mystery of the scenery they surveyed!

Nature courted their solicitude, as she usually does that of all ingenuous minds, and struck them as a most expressive symbol of her Maker, the *novum organum* of Bacon, or in the sublimer language of Newton, the sensorium of Deity!

The wonders both of earth and heaven, were no doubt then contemplated with equal fervour and anxiety, by men thus unavoidably alive to all the charms of beauty and sublimity, which flashed conviction on their minds from every aspect

of the universe; eager to develop and trace the characters of one great designing cause, so legibly stamped on every part of **God's Creation**; and happy to admire the number, magnitude, and glory of his works!

RELIGION AND SCIENCE.

Two principles endow the soul of man,
His *understanding* and his better *will*:
That, through a thirst of knowledge he perfects;
This, by his goodness, more ennobled shines :
Nothing below can more enlarge the first,
Or raise the last, than studying Nature's rules;
Rules, which observ'd, will lead to Nature's God !

ANONYMOUS.

OF all the sciences, astronomy is by far the most ancient; because the objects of it attracted the first notice of mankind, who, when they lost the knowledge of God, worshipped the great luminaries of Heaven as the source of being, and the fountain of happiness.

Thus we read in that exquisite specimen of primitive poetry which distinguished the earliest age of genius, the book of Job, an allusion to this idolatry which prevailed in that period. “ *If I beheld the sun when it shined, or the moon walking in brightness ; and my heart hath been secretly enticed, or my mouth hath kissed my hand ; this also were an iniquity to be punished by the Judge, for I should have denied the God that is above**.”

The wisest of the heathen nations fell into this error, and little doubt can be entertained, that the polytheism of them all, however varied and enlarged, had no other origin than the idea of divinity residing in the host of Heaven.

To counteract this evil, and to shew that the heavenly bodies were all the work of

one supreme intelligence, the legislator and historian of the Hebrews, in his Cosmogony, dwells particularly upon the creation of the sun and moon, and their respective uses; after which he emphatically adds, that the same God “made the stars also.”

This epitome of Creation, or six days’ works, with which our Scriptures open so beautifully, has always been admired, and esteemed a masterly analysis of Nature, in her incipient and elementary form; though a celebrated French wit and libertine has exhausted all his stores of buffoonery, to disparage and revile it [e].

In that most ancient poem already quoted, the book of Job*, we find the following interrogatories:

* Chap. xxxviii. v. 31, 32, 33.

*Canst thou bind the sweet influence of
Pleiades? or loose the bands of Orion?
Canst thou bring forth Mazzaroth in his
season? or canst thou guide Arcturus with
his sons? Knowest thou the ordinances of
Heaven? Canst thou set the dominion
thereof in the earth?*

Such questions as these could originate only in an intimate acquaintance with astronomy, and they shew that the method of dividing and arranging the celestial bodies, was nearly the same in the time of Job as at present. These numerous and splendid globes appear to have been classed at a very early period under separate departments or constellations. The technical phraseology here used, demonstrates the maturity of the science to which it refers; and whatever amplification and improvement astronomy may

have acquired from subsequent discoveries and industry, the precise mode of prosecuting the inquiries it suggests, and the identical terms appropriated in the earliest stage of the investigation, more or less prevail to this day.

We boast, indeed, of various aids and instruments, of different sizes, and formed on different principles, for which, it must be owned, we are indebted to our own ingenuity in mechanics and philosophy. And who will venture to deny the eminent advantages of the superb and masterly apparatus, by which students of astronomy are now more especially enabled to pursue their observations? The efficiency and use of this optical machinery, brought so near to perfection, and executed on the amplest scale, are universally allowed and evinced, by a wonderful accession of new and important

information, even in our time. But neither does it become us to deprive the fathers of this sublime and interesting science, and those venerable magi, who cultivated the first principles of it with so much ardour and success, of all assistance from the resources of art. It is not to be supposed that they made such a progress by the mere efforts of ordinary observation ; and of all the means invention could disclose, or dexterity apply, they would naturally, as we may well imagine, avail themselves. But who can tell the ground on which they took their views and made their observations ? or what devices and implements of mensuration adopted by them, with other valuable and useful discoveries, may have been lost in the lapse of ages ?

The forty-feet reflecting telescope of Dr. Herschel is said to magnify at least six

thousand times, which increases the visibility of the remotest bodies to an indefinite extent, and raises the eye as near the objects, perhaps, as possibly can be done*. This magnificent instrument, as delineated by him who contrived, constructed, and employs it, is an extraordinary monument of ingenuity, mechanism, and philosophy; and to the application of its powers in his celestial researches, we are certainly indebted for a more correct and systematic arrangement and illustration of the heavenly worlds, than has hitherto appeared from any former discoveries.

Not to mention his ideas of our earth's motion, the double belt of Saturn, with his measurement of the mountains and volcanoes in the moon, and his mode of gaug-

* Philosophical Transactions, part ii. p. 347.

ing the heavens; he enlarges the boundaries of the solar system, by pointing out several bodies connected with it before unknown; and his new theory of the heavens, of the sun's position in the galaxy, or milky-way; of the fixed stars, and the indefinite number of systems into which they seem arranged; of the amazing magnitude to which these numerous and enormous systems extend this great universe; of their probable formation, and the shape they assume, by the progressive energies of gravitation and attraction; and the decomposition of individual worlds, by the preponderance of others rushing to their respective centres, greatly improve the sublimity of this interesting study.

In developing the interior construction of the Heavens, all the powers of expression sink under the grandeur and magnificence

of the picture he sketches! Innumerable strata of radiant stars, sparkling in parallel rows, and lost in immensity, seem, from his account, to invest the universe like so many blazing zones! and to whatever point of the spacious arch or cone which embosoms our globe, our visual powers are directed, we are dazzled and overwhelmed by a series of successive and endless splendours! But when he apprises us of new systems, continually forming by the plastic agency of gravitation, of the wreck to which inferior bodies are subjected, by the pressure of superior ones approaching their several destinations, and the shock occasioned by the junction or coalescence of single or insulated orbs; we are content to admire his statement at a humble distance, and only regret our incapacity to follow him*. In this great laboratory of

* Philosophical Transactions, vol. lxxv. part i.
p. 427.

Nature, however, as he elegantly terms it, we perceive more or less of the mighty process, and learn, that by the simple laws of the Newtonian philosophy, worlds are actually analysed, fabricated, and even perish for the preservation of the whole.

We presume not, however, in the following pages, to make very free with these lofty and profound speculations. They are by far too remote from the level of ordinary minds, and above the accustomed mode of thinking adopted by, and familiar to the majority of readers. Our reference to all celestial phenomena, regards whatever is brought forward, not as an article of science, but as an incentive to virtue ; and we omit nothing which falls occasionally in our way, calculated in any degree to raise the subject of our meditations from the magnificent scenery to which they refer, to swell our conceptions of the great Creator,

and to impress our hearts with the grandeur of his works! Every thing we state, or remark, or infer from such data as may occur, which fails of this effect, is irrelevant to our design.

The least acquainted with the philosophy of the Heavens, must derive more or less instruction and improvement from the most superficial view that can be taken of them. We cannot even cast our eyes above us, or about us, without feeling our minds expanded with admiration, and our hearts warmed with devotion! In an age of ignorance and barbarism, the Heavens taught idolatry and superstition; but now that knowledge is more generally diffused, and men are better informed, they inspire only gratitude and piety. They borrow all their brightness from the great fountain of light and life, and expend it liberally for our use;

to teach us, that all our endowments are likewise bestowed for the benefit of others as well as our own. We learn from their inviolable steadiness and order, the incalculable advantages of regularity in our conduct, and exactness in discharging the duties of life. Clouds may intercept their lustre, but cannot interrupt their tranquillity; and the upper regions are never more serene, than while the lower are convulsed with storms! What a beautiful illustration of the Apostle's consolatory doctrine! *Now no chastening, for the present seemeth to be joyous but grievous: nevertheless afterwards it yieldeth the peaceable fruit of righteousness**. They affect no precedence but what is sanctioned by Nature; as the lighter are ever attracted and controuled by the weightier masses; intimating to us, that they only are best entitled to rule, who are best

* Hebrews, chap. xii. v. 11.

able to fulfil the ends of government, which is the welfare of the community; and that among members of society possessing unequal parts, a perfect equality of condition is impracticable. Their obedience to the primary institutions of their Maker, is a standing condemnation of our habitual aberrations from the laws he prescribes, and the precepts he enjoins. Their beauty, which arises more particularly from their answering so perfectly their respective destinations, reproaches our moral deformity, their harmony our mutual dissensions, and their combined utility, our want of public as well as private worth. All this we actually find communicated through the medium even of sight, by celestial phenomena, with as much certainty and precision, as every way-post directs a traveller on the common road, to know the good from the bad, and the right from the

wrong; and a kinder office can hardly be done for mortals, than exciting and fixing their attention to this explicit, public, and persuasive directory.

Under the direction of the Heavens, navigation has long been cherished and improved to an astonishing degree! Through many a boisterous sea, and stormy night, the mariner has steered his course, by no other guide but his compass and the stars; and by the use made of them, in this little work, they become at once a source of amusement, and a chart of duty! The light of our days, and the ornament of our nights, are from the Heavens; and why may not they be also converted into ministers of wisdom and worth, as well as of brilliancy and beauty? Their effulgence adorns our world, and ravishes our hearts with delight; and we would draw from them

such information only as may make us *wise unto salvation*. They shed lustre and visibility on all about us, and are themselves the most visible of all; and we would have them as useful to the soul as to the body, and as improving to the heart as they are pleasing to the sight.

THE ATMOSPHERE.

Either tropic now
'Gan thunder, and both ends of Heaven ; the clouds
From many a horrid rift abortive pour'd
Fierce rain with lightning mix'd, water with fire,
In ruin reconcil'd ; nor slept the winds
Within their stony caves, but rush'd abroad
From the four hinges of the world, and fell
On the vex'd wilderness, whose tallest pines,
Though rooted deep as high, and sturdiest oaks,
Bow'd their stiff necks, loaden with stormy blasts
Or torn up shew.

MILTON.

AFTER all the experiments and discoveries made in natural history and philosophy, we still know as little about the extremities of the atmosphere as of the interior of our globe! It is indeed but a short way into the one or the other we have yet

been able to penetrate. But the former, as a vital principle of existence, has excited very considerable attention in all ages. And the more it has been examined, the livelier and stronger is the interest we feel in its nature and influence [*f*].

With this volatile elastic fluid our whole earth is compassed as with a garment. But how far beyond its surface, or above the level of the ocean, this wonderful fluid may extend, is uncertain. Vapours of all kinds continually ascending from the terraqueous mass of mixed materials which it surrounds, habitually affect its temperature. And of this we are inevitably sensible, as far at least as being placed within the sphere of its action. But whether it has any collision with the adjacent orbs, or their respective atmospheres, or what impression it may receive from those or other invisible

bodies or causes in the upper regions, we have no correct or decisive means of intelligence. Innumerable phenomena which it frequently exhibits, would notwithstanding indicate some such occasional affection.

Meteorological observations cannot be expected in a work appropriated chiefly to whatever appears most charming in nature and devotion. It were, notwithstanding, improper to omit altogether, the dissimilar sensations alternately excited in all who duly consider the stated revolutions of Nature, the regular successions of the seasons, and the very opposite extremes to which the elements in our uncertain climate so constantly verge.

Comparing autumn and spring with summer and winter, days of sunshine and gaiety with others gloomy, dreary, and dark,

by clouds, or fogs, or rain, and a series of fine, beautiful, and dry weather, with that which is cold, bleak, and rainy, who is not sensible of the difference?

The physical effect of this primary law in the temperature of our climate on the sensitive or animal system, it is not for me to investigate or ascertain. But may it not be one cause of that hardihood or perseverance so generally ascribed to the natives of our island? And have we not good reason to be thankful for whatever contributes, however remotely, to our robust make, our patient industry, our preference of ancient custom, our independent spirit, and our sturdy virtue?

The melancholy, said by foreigners to tinge our habits and dispositions, is by some of them absurdly imputed to this

circumstance. We are surely more liable to be oppressed by a dead and uniform, than by a lively atmosphere. It is difficult, indeed, to say how far we may suffer or be affected by a dull interminable plain, which the face of a country every where presents, the vapours incessantly emitted from the surrounding marshes, or the air imperfectly circulated by the intervention of woodlands, plantations, buildings, and overgrown hedges. But we evidently droop and languish as herbage on the lawn, the flower of the fields, or the foliage of the trees, under a series of uninterrupted drought.

There is somewhat acrid in what we call an Italian sky, that accords with the violence and acerbity which have long distinguished the inhabitants of burning climates. It heightens the poignancy of their spices,

brightens their colours into brilliancy, turns their metals into gold, ripens their gems into diamonds, while at the same time it stimulates the rage of their predatory animals, and increases the influence of their deadliest vermin! How well described are these noxious scenes by Goldsmith, in the following picture!

Far diff'rent there from all that charm'd before,
 The various terrors of that horrid shore ;
 Those blazing suns that dart a downward ray,
 And fiercely shed intolerable day ;
 Those matted woods where birds forget to sing,
 But silent bats in drowsy clusters cling ;
 Those pois'rous fields with rank luxuriance crown'd,
 Where the dark scorpion gathers death around ;
 Where at each step the stranger fears to wake
 The rattling terrors of the vengeful snake ;
 Where couching tigers wait their hapless prey,
 And savage men more murd'rous still than they ;
 While oft in whirls the mad tornado flies,
 Mingling the ravag'd landscape with the skies :
 Far different these from ev'ry former scene,
 The cooling brook, the grassy-vested green,
 The breezy covert of the warbling grove,
 That only shelter'd thefts of harmless love.

Beside the constant vicissitude that pervades the whole mass of material existence wherever man is stationed or society improves, art is at work. Who has not marked the alteration introduced by agriculture, gardening and architecture? How changed by these is the face of things! Instead of a desert behold a populous city, in which our busy race pursue their respective callings and professions in endless and emulous diversity. For the wild formerly inhabited by the bittern and the raven, the asp and the adder, we have ample inclosures of arable grounds, fields in high cultivation, gardens gay with flowers, and orchards rich with fruit.

Our culture of the earth allures around us all those birds which charm our ears and delight our hearts with their me-

lody. They derive provision from our industry, and repay us with their songs. They clear our soil of insects; and by building in our shrubberies, they partake with us in all the advantages of our improvements.

This is not all. These local accommodations soften to a certain degree, the natural asperities of the atmosphere. The air nourishes the vegetables, and is nourished by them. How different is the waste inhospitable heath, from the warm fertile inclosure! Here every thing thrives, and is healthy and vigorous. The wilderness, in the lofty style of antiquity, becomes glad, and the desert rejoices, and blossoms as the rose. The beautiful prophecy, that *every valley shall be exalted, and every mountain and hill shall be made low, and the crooked shall be made straight, and the*

rough places plain, is thus literally accomplished.

Full often have we contemplated and felt the universe in its frigid and torpid state, without heat, or life, or comfort. The fields, the trees, the forests, the meadows, the heaths, the hills, and the vallies, places of the highest cultivation, best condition, and greatest shelter; lawns, pleasure-grounds, gardens, nurseries, shrubberies, and plantations, all pillaged of their richest foliage and stript of their sweetest mantle!

But how soon, and how wonderfully, does all the luxury of Nature revive and rise again into being, and how still more rapid is her progress to maturity!

And what shall we say of the pleasing

and transporting variety she introduces every where to our attention and admiration? Surely no language can express it better, with greater brevity, or more happily describe the pious effect it ought to produce, and keep up on our imaginations and hearts, than that of the Psalmist: *Thou renewest the face of the earth**.

“ All this enchanting and delicious gloss
 “ of novelty and variety in substance,
 “ shape, and colour, so charming and
 “ beautiful from its contrast with the
 “ frightful and desolating scene which
 “ preceded, can only come from thee,
 “ who art the Father, the Spirit, and
 “ the comfort of every living thing. Sweet
 “ and useful, both for health and com-
 “ fort, are the frequent interchanges of

* Psalm, civ. 30.

“ wet and dry, cold and heat, frost and
“ thaw, clouds and sunshine! and thank-
“ fully ought we to acknowledge the source
“ of all this bountiful and unwearied ac-
“ commodation! Wherever we are, thou
“ art ministering to our pleasures, grati-
“ fying our senses, soothing our feelings,
“ and ravishing our hearts, with a pro-
“ fusion of goodness and mercy! The
“ warmth which cherishes, the light which
“ cheers, the strength which upholds,
“ the food which nourishes, the drink
“ which revives, and the sleep which re-
“ stores our frail enfeebled powers, are all
“ from thee! tokens of thy bounty, and
“ proofs of our constant dependence on
“ thy care. And we owe thee our sin-
“ cerest gratitude for these gracious sym-
“ bols of thy indulgence; for the many
“ prospects which impress and captivate
“ our hearts; and especially for all our

“ senses and faculties, which enable us to
“ relish and enjoy them.”

Ten thousand thousand precious gifts
My daily thanks employ ;
Nor is the least a cheerful heart,
That tastes those gifts with joy.

ADDISON.

It is through this commodious medium that we imbibe the balmy breath of Heaven, that we experience the friendly auspices of the higher regions; that winds blow, rains fall, and dews distil; that we enjoy the salubrious fragrance of the morning, and that the shadows of the evening, like a pavilion of safety and repose, are dropt around us! By means of this circumambient fluid, the horrors of our nights are dispelled by the placid and softening effulgence of the moon; and the luminous matter constantly afloat in the Heavens, occasionally radiates our

hemisphere with the united transparency of all those ethereal lamps which bespangle the vaulted sky. From this we receive the capacity by which our lungs play, our pulse beats, our blood circulates, and all the fine, minute, and master springs in the animal machine, are impelled and kept alive!

How highly do the meanest and most trifling of our manifold mercies rise—rise in our partial and false estimation—while those of the last importance are overlooked! We analyze the whole surface of the globe for a favourite plant, or a plant valuable only for its scarceness! And is not all Nature eagerly ransacked, to gratify the palate, the eye, and the ear, while those inestimable objects on which even life and all its blessings and enjoyments absolutely depend, are seldom considered

with sufficient interest, or recollected with due sensibility? Yet we cannot open our lips, or cast our eyes about us, emit a breath, or move a step, without having our hearts impressed with a deep conviction of his goodness, who hath graciously provided such ample and well adapted means for our respiration! Whatever is sweet to the taste, or pleasing to the sight, or agreeable to any of our senses, in the Heavens above, or on the earth beneath, we enjoy by the exercise of those organs, which owe their efficiency, under God, entirely to the atmosphere. It dispenses health by its purity; it braces our nerves by its energy; it animates and invigorates our spirits by its soft and cheering influence; and it revives and rouses all the dormant and latent springs in our constitution, by its freshness and elasticity.

So useful is this primary vital principle, both to the mind and body! The ways in which it contributes to all our powers and enjoyments, are numberless and various. And is not the Author of an accommodation thus necessary and appropriate, eminently entitled to our devoutest homage and acknowledgments? Ought not every organ we possess, every faculty we enjoy, all we can excite without, and every thing within us, be stirred up to praise his holy name, for blessing us thus abundantly, by infusing into his creatures this breath of life? Hereby we live and move, and have our being; and it is of the divine mercy we are not consumed by the very means of life; that the air we respire is not malignant, but salubrious; that we have organs so well adapted for its reception; that they are often kept in repair amidst debility and corruption; and that the vapour in which

we are wrapped as in a mantle of velvet, is not a magazine of disease and death, but of comfort and life.

*How manifold are thy works, O Lord!
in wisdom hast thou made them all!*

CLOUDS.

O Thou, whose hands the bolted thunder form,
Whose wings the whirlwind, and whose breath the storm :
Tremendous God ! this wond'ring bosom raise,
And warm each thought that would attempt thy praise.
O ! while I mount along th' ethereal way
To softer regions and unclouded day,
Pass the long tracks where darting lightnings glow,
Or trembling view the boiling deeps below ;
Lead thro' the dubious maze, direct the whole,
Lend heavenly aid to my transported soul.

OGILVIE.



NATURE and grace mutually illustrate each other. Every object in the Creation points our attention to a hidden cause, by which all the parts, great and minute, are kept in order, are directed to

their proper purposes, and rendered subservient to the preservation of the whole system. From thence revelation fetches many of its aptest similitudes and most sublime elucidations.

If Nature simply makes a confession of divine power and wisdom in her origin and preservation; the word of God sanctifies all her works, and turns them into preachers of righteousness.

The humble ant, which crawls in the dust, and, guided by instinct, provides for her future support, teaches Man the lesson of practical prudence in all that concerns his temporal and eternal welfare. Notwithstanding his elevated rank in the Creation, and the enlarged and variegated powers with which he is endowed, Inspiration sends him for instruction in the first

principles of human wisdom to the meanest of insects.

From contemplating the economy and pursuits of animated Nature, his mind is then raised to survey the wonders which are scattered in rich and abundant variety above him. It is the continuation of the same lesson of wisdom; and the whole is designed to render man humble and vigilant, steady and prudent in all the concerns of human life, yet aspiring to higher scenes, and seeking an inheritance beyond the skies.

No objects are more striking, though none are more familiar, than CLOUDS. They are continually varying their appearances, and frequently indicate the grandest and most terrible effects in the atmosphere.

Now they are beheld with a calm and pleasing eye, which follows them in their wanderings and changes, delighted at the effects produced thereby on the landscape beneath, and with the soft tint diffused over all the cerulean arch above.

But how soon does the mind collect its powers into an awful contemplation of the blackened hemisphere; and behold with fearful apprehension the portentous elements gathering together, as it were, in battle-array, and, in the language of our great epic poet,

With heaven's artillery fraught, come rattling on,
—then stand front to front,
Hovering a space, till winds the signal blow
To join their dark encounter in mid-air,

PARADISE LOST, B. ii. 714.

Of all the objects in the Creation, none surely supply such a grand variety of

imagery for poetical description as the Clouds; whence we find the father of song often comparing the exploits and characters of his heroes to the nature and actions of the elements. Thus in the soft and gentle display of easy dignity, he describes his favourite Greeks as waiting for their foes with the steady calmness of the clouds hanging on the summit of a lofty mountain. In another place he draws a different picture, and to represent the fierce preparation for war, and its effects, he compares it to an approaching thunder storm, which drives the shepherd and his flock for shelter into a cave.

This last use of the similitude has been happily adopted and improved by the Mantuan bard.

As when some tempest o'er mid ocean roars,
 And, wing'd with whirlwinds, gathers to the shores;
 With boding hearts the peasants hear from far
 The sullen murmurs of the distant war;
 Foresee the harvest levell'd to the ground,
 And all the forest spread in ruins round:
 Swift to the land the hollow grumbling wind
 Flies, and proclaims the furious storm behind*.

PITT'S VIRGIL.

But how feeble and contracted is all the beauty and elevation of poetical description, when compared to the sublimity contained in the scriptural adaptation of the same imagery! If we admire the art with which Homer resembles his heroes to a tranquil cloud, what shall be said of that description which figures to us the

* Qualis ubi ad terras abrupto sidere nimbus
 It mare per medium; miseris heu, præscia longè
 Horrescunt corda agricolis; dabit ille ruinas
 Arboribus, stragémque satis; ruet omnia latè;
 Antè volant, sonitumque ferunt ad littora venti.

Omnipotent “as covering himself with light as with a garment; and as stretching out the whole expanse of the Heavens for the curtain of his pavilion: who layeth the beams of his chambers in the waters; who maketh the clouds his chariot; and walketh upon the wings of the wind*?”

Here, indeed, the idea of security and dominion is expanded to the utmost stretch of human comprehension. The Almighty is introduced not merely as “ruling the whirlwind and guiding the storm,” but as actually walking with a sober and majestic step upon the wings of the wind.

When we behold the clouds of Heaven flying rapidly before a mighty tempest, we may endeavour to catch the force of

* Ps. civ. 2, 3.

the magnificent and tremendous idea conveyed in the words of the Psalmist. And yet the page of inspiration goes far beyond even this exquisite painting; and collecting all the variety of celestial phenomena together, embodies them into an obedient train round about the throne of God: “A fire goeth forth before him, and burneth up his enemies round about. His lightnings enlightened the world: the earth saw and trembled. The hills melted like wax at the presence of the Lord: at the presence of the Lord of the whole earth*.”

In the prophetic style of exhibiting the divine judgments upon sinful nations, the same images are generally used, but with a heightened effect, as well to mark the certainty of the event predicted, as to

* Ps. xcvi. 3—5.

impress upon the mind a deep sense of the absolute power and justice of God. Thus in the prophecy of Nahum, the divine majesty is delineated riding in the gloomy combustion of the elements, as figurative of his dominion over all nations, and of the equity of his proceedings in converting all natural and moral evil to the punishment of the wicked and the happiness of the righteous. “The Lord hath his way in the whirlwind and in the storm, and the clouds are the dust of his feet. The mountains quake at him, and the hills melt, and the earth is burnt at his presence; yea, the world and all that dwell therein. Who can stand before his indignation? and who can abide in the fierceness of his anger? his fury is poured out like fire, and the rocks are thrown down by him*.”

This picture of a tempestuous scene displays all that is terrible in Nature, the conflict of electric clouds above pouring forth livid sheets of fire, and the loftiest mountains on earth sinking away into nothing at the mere touch of the destructive element.

Thus does the language of inspiration represent to us, under the most terrific phenomena in the Creation, the agency of the Almighty in the moral world, and the faithfulness of his judgments upon the sons of pride and impiety.

“ Though he is slow to anger, he is great in power and exact in justice,” and the very blessings which he bestows will be turned at last, if they continue to be abused, into the instruments of his vengeance.

What, for instance, can be more salubrious than the clouds of Heaven? How light and beautiful in their formation, how gentle in their influence, and how beneficial in their effects! In the philosophical language of Elihn, “behold God is great; he maketh small the drops of water: they pour down rain according to the vapour thereof; which the clouds do drop and distil upon man abundantly*.”

And yet should the fluid body which surrounds our globe become contaminated with principles foreign to its natural simplicity, the over-charged clouds will burst with violence, and spread horror and devastation around. But it is from these agitations that the elementary mass regains its purity, administers to the health of man, and restores life and beauty to the

* Job, xxxvi. 27, 28.

Creation. Similar is it with the moral world: evil principles and corrupt manners poison the mind, and spread through all classes of society. Ambition and avarice destroy every sentiment of moderation, justice and content. Religion, the great spring of action, and the regulator of life, becomes suspended; and the conflict of licentious passions produces disorders, contentions and revolutions.

Scripture describes the changes which occur in the moral system of the world, by images drawn from the corruptions of Nature. Thus an apostle writing against the deceivers in his time, who despised dominion, and spake evil of dignities, compares them to “clouds without water carried about of winds; trees whose fruit withereth without fruit; twice dead, plucked up by the roots; raging waves of the sea foaming out their own

shame ; wandering stars to whom is reserved the blackness of darkness for ever*."

No metaphors could more aptly figure the lewd practices and impious blasphemies of the ambitious and turbulent men, against whom the primitive church was cautioned, than those which the sacred writer has here adopted.

Vain and pompous in their appearance ; arrogant in their assumptions, and specious in their pretensions ; these boasters were mere hypocrites, void of good themselves and the perverters of others.

When such men gain an ascendancy, and their pernicious principles produce a total indifference to religious truth, and virtuous practice ; though all may seem

* Jude, v. 12, 13.

quiet and serene around; the stillness is portentous, and this moral lethargy is the sure sign of dissolution.

Out of such a state men are awakened by the terrors of the Almighty; and the poisoned atmosphere produces those terrible convulsions which shake the mightiest empires and the best compacted systems to their foundations, so that scarcely a vestige of them remains.

Yet even in all this work of desolation, the wisdom and mercy of God are apparent, to “them who trust in him.” Like the prophet in the mount, they can behold unmoved the crash of elements and the convulsions of Nature; the tempest which rends the mountains, and breaks in pieces the hardest rocks; the earthquake that roots up the hills, and the fire of Heaven

which consumes instantaneously the lofty and spacious forests*.

In the midst of the elemental war they perceive the hand of God directing the whole for universal good, and they hear “his still small voice” encouraging them to abide in a confident trust of his mercy till the indignation be overpast†.”

Such a state of contemplative serenity may be happily imagined from an account related by a very scientific traveller. Don Ulloa, when in Peru for the purpose of measuring a degree of the meridian, was stationed for some time on the summit of Cotopaxi, a mountain three miles above the level of the sea. “The sky,” says he, “was generally obscured with thick fogs; but when these were dispersed, and the

* 1 Kings, xix. 11, 12. † Isaiah, xxvi. 20.

clouds moved, by their gravity, nearer the surface of the earth, they surrounded the mountains to a vast distance, representing the sea, with our rock, like an island in the centre of it. When this happened, we heard the horrid noises of the tempests, which discharged themselves on Quito, and the neighbouring countries. We saw the lightnings issue from the clouds, and heard the thunders roll far beneath us. And, whilst the lower regions were involved in tempests of thunder and rain, we enjoyed a delightful serenity. The wind was hushed, the sky clear, and the enlivening rays of the sun moderated the severity of the cold."

What a sublime scene for contemplation is this to the philosophical observer; and how little for the moment do the most formidable phenomena of Nature appear

in the midst of the vast expanse around him ! He looks down with a calm and steady eye upon the rolling tempest lashing the surges of the ocean into mountainous heaps, and tearing up the pride of the forest by the roots.

The pealing thunder which shakes the loftiest edifices and appals the stoutest hearts, seems to him only as the distant sound of artillery ; and the flashes of vivid lightning that rift the very rocks in sunder, are but like the sportive fireworks exhibited on a night of rejoicing.

In like manner the mind, raised above the world, and seated in the bosom of Religion, enjoys the tranquillity of a pure and an unruffled atmosphere, while the rest of mankind are agitated by the storms of passion, and perplexed by the contentions and fall of nations.

Amidst the wild uproar and the fearful expectations which prevail below, the soul that is elevated above the earth, and freed from the corrupting influence of its cares and follies, looks down with pity upon the miseries which it cannot prevent, at the same time adoring Providence, for producing general good by means which superficial observers presumptuously censure as unwise and unjust.

It is the happy privilege of Religion, to turn distresses into blessings, and to draw from the storms and tempests of life, matter of instruction and comfort. If the men of the world are dismayed at public calamity, or are despairing under the pressure of personal affliction, the Christian can make the language of the prophet his own: “ I will rejoice in the Lord, and joy in the God of my salvation*;” or, according

* Hab. iii. 8.

to the paraphrase of an ingenious and pious writer :

When o'er the earth Thou wav'st the avenging rod,
 When Nature trembles at an angry GOD ;
 When the bold breast, with terror not its own,
 Shakes at thy voice, and withers at thy frown ;
 Then by no storms dismay'd, no fears deprest,
 In Thee my soul shall find eternal rest ;
 O'er me secure thy hov'ring wings shall spread,
 And sleep's mild opiate bless my peaceful bed.

OGILVIE.

But the agitations of Nature, as well as the visitations of Providence, are the necessary parts of an organized and benevolent plan. However violent and destructive such judgments may be for the time, they are calculated to remove greater disorders, and by a strong operation to carry off corruptions which by accumulation would produce pestilence and death.

In all cases we are taught to admire that wisdom and goodness which makes

even evil correct itself, and after raging for a period with the utmost violence, become gentle and salutary to mankind.

The atmosphere appears more beautiful after a tremendous storm, and the clouds which were then charged with fury, and raged with terror, are now carried away by every gentle zephyr, and drop fatness where before they menaced destruction.

Thus the economy of Nature is continually preserved, and the general order and good of the system maintained, amidst the endless variety of weather and of seasons.

Nor is the regularity less in the government and preservation of the Church of GOD. Storms and persecutions have raged against it from the very beginning; but these visitations only served to strengthen the

principles of truth, to root them deeper in the soil, and to spread forth the branches with a more luxuriant foliage.

When the first promulgators of the gospel were “scattered abroad” by the sanguinary decrees of the enemies of their religion, they only gave it a wider circulation, and thus what was intended to destroy, proved the means of making Christianity more generally known and believed.

Upon this subject, a very judicious expositor hath made the same observation and comparison. Speaking of the dispersion of the early disciples, he has this note: “In mercy, therefore, to the churches, and even to themselves, whose truest happiness was connected with their usefulness, were they, like so many clouds of Heaven, driven different ways by the

wind of persecution, that so they might empty themselves in fruitful showers on the several tracts of land through which they went preaching the gospel*.”

Then was eminently fulfilled that prophecy of Isaiah; “ The wilderness and the solitary place shall be glad for them ; and the desert shall rejoice, and blossom as the rose. It shall blossom abundantly, and rejoice even with joy and singing ; the glory of Lebanon shall be given unto thee, the excellency of Carmel and Sharon ; they shall see the glory of the Lord, and the excellency of our God †.”

The Clouds exhibit a very remarkable phenomenon, which the Almighty has adopted as a sacramental or covenant sign with man, never more to destroy this globe by a watery deluge.

* Doddridge, on Acts, viii. 4. † Is. xxxi. 1, 2.

When the earth was renewed after the flood, a promise was made to the patriarch who then stood the representative of all future generations, that the globe should ever remain safe from a similar destruction. As a perpetual remembrance of the judgment and the promise, God said ; “ I do set my bow in the cloud, and it shall be for a token of a covenant between me and the earth. And it shall come to pass, when I bring a cloud over the earth, that the bow shall be seen in the cloud : and I will remember my covenant which is between me and you and every living creature of all flesh ; and the waters shall no more become a flood to destroy all flesh. And the bow shall be in the cloud ; and I will look upon it, that I may remember the everlasting covenant between God and every living creature of all flesh that is upon the earth*.”

Some superficial sceptics have raised an objection to the Mosaic History, by saying that if there was rain before the flood, there necessarily must have been such a bow as is here stated to have been first exhibited to Noah. But the original warrants no such conclusion, neither is it liable to any such charge. What our translation rather ambiguously renders ‘I do set,’ should be, according to a more correct version, ‘*I have set* my bow in the cloud ;’ by which reading this futile objection vanishes at once.

The reference, however, to such a grand, beautiful, and even solemn phenomenon, was, in the situation wherein the first planters of the new world then stood, most appropriate and impressive. It amounted as much as to this: “Behold that variegated and magnificent arch,

touching the extremities of the horizon, and reaching to the zenith ; see it as it were embracing the whole range of your new habitation ; and erected as a trophy of my power, dominion and justice over a sinful world ; behold it also as the covenant of my mercy, in saving you from the devouring flood ; and transmit to your posterity the remembrance of this stupendous event, and the assurance of my grace and loving-kindness to man.”

When, therefore, we contemplate this glorious spectacle in the concave of Heaven, let it be accompanied with a grateful and devout affection of heart to our great Creator and Redeemer ; who in the midst of judgment remembers mercy, and in all the varieties of life gives peace, security and comfort, to those who put their trust in him.

He hath engaged to preserve them as he did those in the ark of old, and though ‘they may be afflicted and tossed with tempest’ on the contending billows of a distracted and afflicted world, yet while they continue in obedience to his will and word, they shall be safe from every calamity. His promise is immutable, and the safety of his church is therefore immovably secure. “As the rain cometh down, and the snow from Heaven, and returneth not thither, but watereth the earth, and maketh it bring forth and bud, that it may give seed to the sower and bread to the eater, so shall my word be that goeth forth out of my mouth; it shall not return unto me void; but it shall accomplish that which I please, and it shall prosper in the thing whereto I sent it*.”

* Isaiah, iv. 10, 11.

Hereby we have an assurance that every promise and prophecy contained in the sacred code, shall as certainly receive a complete accomplishment, as the elements discharge their regular duties. As the earth is replenished and rendered fruitful by the continual action of the air and the distillation of the clouds, so the moral world is regulated by an unerring Providence, and all its mutations are subservient to a predisposed plan of universal good.

This truth is admirably though simply expressed, in the following stanzas of a very old English poet:

The raynbowe bending in the skye,
 Bedeckte with sundry hewes
Is lyke the seate of God on hye
 And seemes to tell these newes :
 That as thereby he promised
 To drowne the worlde **no more**,

So by the bloud which Christ hath shed
He will our health restore.
The mistie clowdes that fall sometyme,
And overcaste the skyes,
Are lyke to troub'les of our tyme,
Which doe but dim our eyes :
But as such dewes are dried up quite
When Phœbus shewes his face,
So are such fansies put to flighte
When GOD doth guide by grace.

GEORGE GASCOIGNE'S GOOD-MORROW,
written about the year 1570.

LIGHT.

—————

LIGHT—from whose rays all beauty springs,
Darkness—whose wide expanded wings,
 Involves the dusky globe ;
Praise Him who, when the Heavens he spread,
 Darkness his thick pavilion made,
 And **LIGHT** his **REGAL** robe.

MERRICK.

—————

THE primary object of vision is light, and this the Heavens dispense with liberality; so that nothing in this great Creation, impressed as it every where is, with miracles of wisdom and excellence, is more beautiful and marvellous ! Light is the elder offspring of Deity, the master-piece of his material works, and the original communication of himself when he opened to them the treasures of his bounty !

Light was the commencement of our world, and it continues to be the soul of every beauty which it contains. It is the great medium by which the charms of all things are made visible, and without which nothing could appear, or probably exist.

From this inexhaustible store-house, Nature derives all her colouring and lustre, the rainbow its tints, the landscape its beauties, and every feature in that glorious picture of divinity so legibly impressed on the whole Creation, its brilliancy and sweetness.

All creatures, animate and inanimate, seem to vie, in return, with each other, by heightening, as by common consent, the blessing of light.

The birds warble their salutations on its

daily appearance, and greet its faintest rays by their liveliest strains. The flowers and vegetable tribes in all their orders, revive at its approach, and at the opening of the day they expand their leaves to welcome with silent, but grateful sensations, its auspicious return.

Its nature and qualities are above admiration, and elude research. All the schools of philosophy are still at a loss to investigate its origin, to define its substance, or to ascertain exactly its influence. The velocity of its motion, the subtilty of its essence, the extent of its circuit, the glories of its lustre, and its universal utility, have frequently engaged, and yet confounded, the acutest faculties of the brightest minds.

We perceive no beauty or excellence in

the most elegant objects, even by the help of the clearest optics, and through the purest medium, without light. In its absence all Nature is black and cheerless. By means of this glorious and celestial fluid, which wraps the universe as in a luminous mantle, and makes all things assume an aspect of comeliness and gaiety, organization and vitality are every where diffused over the surface of the globe: hereby we contemplate the majesty of the Heavens, and are charmed with the beauties of the earth. Independent of the magnificent objects and captivating scenes which it thus presents in so much lustre, we find our whole frame instinctively affected, our spirits enlivened, our hearts gladdened, and our minds sensibly raised and gratified in its presence.

No wonder that light is so frequently

used by the sacred oracles, as the symbol of our best blessings. Of the Gospel-revelation one apostle says, *The night is far spent, and the day is at hand.* Another, under the impression of the same auspicious event, thus applies the language of ancient prophecy: *The people who sat in darkness have seen a great light; and to them which sat in the region and shadow of death light is sprung up.*

All things, indeed, under an evangelical dispensation, are brought home to our affections by means of this charming similitude: God himself, as the Creator and fountain of all being and perfection, is styled *the Father of lights*; and our Saviour is called *the light of the world*; because he hath dissipated by his gospel the moral darkness which was spread out over all the human faculties after the fall; and hath brought

life and immortality to light. The knowledge of the truth is also called *the light of life*; the renewing our nature, a *turning from darkness to light*; the graces of the Christian life are denominated *the works of light*, and the heavenly joys, *the inheritance of the Saints in light*.

We are all naturally ambitious to shine in the world. It is the foible of our race, from which the wise and the old are, perhaps, as little exempted as the silly and the young. But the fault lies, not in the passion itself, but in mistaking the sphere, and choosing improper objects.

Many are preud to shine in the lustre of pomp, the elegance of dress, or the splendour of equipage; others again are ambitious of the voice of fame, or the acquisition of power. And a long list of those who

take the lead in the heraldry of the world, have lived and died for no higher or better end, than to make a figure among the great and renowned.

To such as act by the opinion of the world alone, fashion is above all laws human and divine. They study nothing but appearance. This object absorbs every appetite, passion, principle, and duty. Let them make a vain show, and it matters not how much they disquiet themselves or others; neither care they by what means their eminence is acquired or secured.

In religion alone we are taught from what principle, in what manner, and by what means to shine in the world. It forbids no necessary quality, nor proscribes any becoming ornament, which may accord with innocence and decency. But it points

out something higher and nobler, as the object of our immortal nature, and in the enjoyment of which the human soul only can find rest. The eye is not satisfied with seeing, nor the ear with hearing, but when we shine in the sight of God, and enjoy his approbation, or, in the language of Holy Writ, *walk in the light of his countenance*. Most objects of ambition are beyond the grasp of by far the greater part of men, but this is within the reach of all. Nor does any person exist, of so mean a capacity, of so contracted an education, in ever so obscure a condition, or under such a cloud of distress, as that he may not shine acceptably before Him whose eyes *are in every place, beholding the evil and the good*.

This elegant metaphor of light, the Holy Spirit happily adopts for conveying to our minds some faint idea of those glorious pri-

vileges we enjoy by his grace, mediation, and ministry, who is the light of truth, the light of the world, and the light of life. In this light only can we see and be seen as we ought, to our own satisfaction or the satisfaction of those about us! There is no other medium by which we can know and be known, which points out the *strait way that leadeth unto eternal life*; and which gives a view of the land afar off, notwithstanding the clouds that sometimes intervene, to exercise us in our Christian life, and freshen the graces which might decay and fade by the effulgence of light.

Here faith, which is *the substance of things not seen*, discovers the glory that in due time shall be revealed; hope penetrates within the veil of eternity, anticipating the fulness of joy, and all those *pleasures which are at God's right hand forevermore*;

while love or charity, enhanced by all the sufferings incident to our present frail and mortal condition, with patience on one hand and expectation on the other, like *the rising light, shineth more and more unto the perfect day.*

This light, which renders the highway to heaven and immortality so luminous, safe, and delightful, enlightens the whole path of duty with its clearest beams, and never leaves the well-meaning mind at a loss how to act, when Nature dictates, religion directs, and God commands.

Christians are never perplexed in their minds, or a prey to gloomy apprehensions, but in proportion as this light is more or less absent. It is only when we are steadfastly intent in the observation of our course under the clear influence of religious truth,

and when in this light we see perfectly every thing about us, being fully aware of our situation in all its circumstances and bearings, that the outward conduct and inward state of mind can be correct and satisfactory. Such is the information afforded by the Gospel, which teacheth in perspicuous language whatever appertaineth to life and godliness ; and opens abundant resources for the supply of all our wants ; in every extremity directing us where to find redress, resolving whatever doubts may hang upon our minds, and giving full assurance that we can never err while we rely on God for the security of our souls, and follow the directions which he hath laid down in his word, to be a *light unto our feet, and a lamp unto our paths.*

Blessed then are they who walk as the children of the light and of the day ; whose

minds, like the crystal, exhibit a faithful view of the effects of religion ; and whose conduct demonstrates that the grace of God hath not shone upon them in vain.

While the proud and ambitious, the wicked and licentious men of the world, however splendid may be their talents, formidable their power, or extensive their influence, sink away like the meteors of the night, they who are enlightened by divine wisdom, *shall shine as the brightness of the firmament ; and they who turn many to righteousness as the stars for ever and ever*.*"

The subtilty and activity of light far exceeds all human comprehension. Its effects upon animal bodies are seen in the various tinges they assume, according to the nature

of the light to which they are exposed. Thus in high northern latitudes, animals, during the absence of the solar light, become white, and in proportion to the action of the light upon them, they are a darker colour.

Nor is the influence of light less powerful upon the vegetable tribes. Every plant, in fact, may be denominated a heliotrope, though the term is confined only to such flowers as exhibit a striking direction towards the sun. But in the privation of light, it is well known that the leaves of vegetables lose their colour; and that they acquire again richer verdure, according to the degree of light to which they are exposed.

The power of this active substance goes still farther than this: it penetrates into the recesses of the earth, and acts upon the

fibrous roots of plants, and the suckers of trees: nor is it improbable but that its influence contributes much to the beauty and lustre of gems and the ores of metals.

The velocity of this body is no less surprising; for the solar rays, according to accurate observations made on the satellites of Jupiter, pass over a space equal to the distance between the sun and us, which is about eighty-one millions of miles, in seven minutes.

Light does not combine with the atmosphere, nor with any other gas; but it is altogether a distinct substance, operating upon all others, contributing to their beauty, and perhaps to their very texture and form, while it is incapable of being destroyed by them.

It is diffused throughout the whole universe, and in continual exercise for the preservation of all bodies, yet never actually confined to any; so that the questions in Job are as philosophical as they are elegantly poetical: “ Where is the place where light dwelleth ? and as for darkness, where is the place thereof, that thou shouldest take it to the bound thereof, and that thou shouldest know the paths to the house thereof* ?”

This consideration of the independent existence of light, supplies a direct and most satisfactory answer to the objection so often repeated, against the truth of the Mosaic history, where the creation of light is made to precede that of the sun and other luminaries.

* Job, xxxviii. 19, 20.

Passing over the various theories and conjectures which have been adopted to clear up this apparent difficulty, we have nothing farther to do than to adopt the discoveries of modern science, to prove that the sacred historian was perfectly correct, and philosophically accurate, in his relation. If the sun be nothing more than an opaque body surrounded by an atmosphere of light, as hath been clearly demonstrated by the observations of an exact astronomer*, it proves that the substance is distinct from the body which it envelopes. In fact, the light of the solar orb is only an immense collection of that fluid in a more active sphere, the particles of which are constantly driven from thence, and their places supplied by others: so that the substance is in continual motion, flying off through all

* Dr. Herschel.

parts of the system, till after various courses and operations, it recedes to the central body, which propels it again with a new force.

It is not to be supposed that the ante-solar light was a splendid effulgence or a strong diffusion of that body upon the infant earth. This would have been probably injurious to the very purpose intended, which was, that the light might act for the purpose of separating the air from the water, and causing the “earth to bring forth grass, the herb yielding seed, and the fruit-tree yielding fruit after its kind, whose seed is in itself*.”

Now the force of the solar rays might have been too intense for the tender state

* Gen. i. 11.

of the vegetable system; and therefore the earth was prepared for the uses designed, and all the subsequent processes of its parts, by the soft and invigorating influence of the substance which afterwards became more active and powerful, when the sun was made the principal receptacle and agent of light for all the bodies within his sphere. Something similar to this appears to have been the opinion of our great poetical commentator, when he gave a description of the Creation:

Let there be light ! said God, and forthwith light
 Ethereal, first of things, quintessence pure,
 Sprung from the deep ; and from her native east,
 To journey the airy gloom began,
 Spher'd in a radiant cloud, for yet the Sun
 Was not : she in a cloudy tabernacle
 Sojourn'd the while.

PAR. LOST, B. vii. 243.

Notwithstanding the continual action and recession of this substance, it has been

most accurately ascertained, by a very profound mathematician*, that the sun does not lose above a thirteen thousandth part of his diameter in one hundred and thirty-five millions of years; consequently the system would not be destroyed for myriads of ages, unless he who said, *Let there be light*, shall pronounce his fiat, that *Time shall be no longer*†.

The prodigious velocity of light, as well as its immense and various utility, renders it an apt emblem of the angelical orders which surround the throne of the Almighty, ever obedient to his will, and going forth with instantaneous readiness to execute his commands.

The rapidity of the particles of light is-

* Bishop Horsley.

† Rev. x. 6.

suing from the orb of the sun, and darting with inconceivable swiftness to the extremity of the system, is nothing, compared to the activity and power of those celestial intelligencies who hold immediate communion with the Father of Lights, even while they are in this lower sphere, *ministering unto the heirs of salvation**.

But the inspired writers seem to have been particularly fond of this image, it representing, as far as any thing in the Creation can possibly represent, the purity of the Divine Essence: **GOD is LIGHT: and in him is no darkness at all**†.

The salutary and enlivening effects of light upon the heavens and the earth, upon all substances in Nature, and upon every

* Heb. i. 14.

† 1 John, i. 5.

order of beings throughout the visible Creation, do certainly afford a lively illustration of the infinite knowledge, power, and goodness of GOD.

All things are open to him, and not a single movement of the mind can escape his observation; he upholdeth all things by the word of his power; and he *doeth whatsoever he pleaseth in heaven and in earth, in the seas and all deep places, or in the abysses beneath, inhabited by the spirits of darkness**.

His eye penetrates through all the recesses of Nature, and examines the motive of every action of man. What a tremendous consideration is this; and how should it continually operate upon us, in

* Psalm cxxxv. 6.

making us watchful over the thoughts of our hearts!

*How can I do this great wickedness, and sin against God?** said the illustrious Hebrew youth, in the moment of a dangerous temptation. His declaration was founded upon a conviction, that the Divine Presence was every where, and that no wickedness, however hidden it might be from human observation, could be concealed from the sight of Him who is infinite in wisdom, holiness, and justice.

Nothing would so effectually contribute to our happiness, as the continual remembrance of this most important truth, that *the eyes of the Lord are in every place, beholding the evil and the good*†. This

* Gen. xxxix. 9.

† Prov. xv. 3.

would restrain us from many follies, preserve us stedfast in the midst of numerous temptations, and enable us to maintain *a conscience void of offence both towards God and towards man**.

To adopt the words of an excellent writer, “The actual, constant consideration of God’s presence, would be the readiest way in the world to make sin to cease from among the children of men, and for men to approach to the blessed estate of the Saints in heaven, who cannot sin, for they always walk in the presence, and behold the face, of God†.”

Upon this subject, how sublime and instructive are the effusions of the Psalmist :

* Acts, xxiv. 16.

† Bishop Taylor’s *Holy Living*, chap. i. § 3.

*Whither shall I go from thy spirit? or
whither shall I flee from thy presence? If
I ascend up into heaven, thou art there;
if I make my bed in hell, thou art there;
if I take the wings of the morning, and
dwell in the uttermost parts of the sea,
even there shall thy hand lead me, and
thy right hand shall hold me. If I say,
surely the darkness shall cover me; even
the night shall be light about me. Yea,
the darkness hideth not from thee, but the
night shineth as the day: the darkness
and the light are both alike to thee*.*

Now if material light be so glorious,
and so extensively beneficial, how much
greater must be the glory and value of a
communion with the ineffable fountain of
all truth; and if light be essential to our

* Psalm cxxxix. vii. 12.

present convenience, and, indeed, to our very being in this world, how much more essential is divine light to our mental comfort and to our spiritual existence, that *we may do the works of Him that placed us in this probationary state while it is day ; because the night cometh, when no man can work**!

May this marvellous and majestic light, in whose splendour all created luminaries are lost and extinguished, shine into our hearts, and give us *the knowledge of God in the face of his Son, Jesus Christ !* Happy they on whom it dawns immortal day : who anticipate by faith the fruition it imparts : who are even now admitted to a participation of its pleasures—pleasures which neither cloy nor diminish, and will

* John, ix. 4.

never have an end; but which shall survive not only our frail bodies, but sun, moon, and stars, and the glories of the universe; which the shadows of death cannot cloud, which the gloom of the grave cannot darken; but which are substantial as the throne of God, and bright as the visions of eternity

THE SUN.

Along the skies the SUN obliquely rolls,
Forsakes, by turns, and visits both the poles.
Diff'rent his track, but constant his career,
Divides the times, and measures out the year,
To climes returns where freezing winter reigns,
Unbinds the glebe, and fructifies the plains ;
The crackling ice dissolves ; the rivers flow ;
Vines crown the mountain tops, and corn the vales below.

BAKER'S
Poem on the Universe.

THIS immense and magnificent luminary, which enlivens and governs the several planetary worlds, both primary and secondary, that revolve continually around him, is properly made use of in holy writ

as an emblem of the Fountain of Being and the Saviour of Men.

As the whole system of which we are a part, derives cheering light and invigorating heat from this vast orb, whose influence pervades the remotest objects with inconceivable rapidity and power, so the divine goodness is continually present in every place, to illuminate the understanding and to improve the heart of every believer.

The church of the redeemed, rich in the bloom of holiness, and ripening for the harvest of glory, is said to be *clothed with the sun**; because it shines in the splendour of his righteousness, and is invigorated continually by his grace. It is the gracious promise, on which all the hopes and wishes of Christians are placed, that the *righteous*

* Rev. xii, 1.

*shall ultimately shine as the sun**, in the kingdom of their father. To them, even in this *vale of tears*, amidst all the darkness and gloom of a sinful and changing world, disturbed by storms, and made dismal by increasing iniquity--to them, at all times and in all seasons, *the Lord God is a sun and a shield†*. And good reason have the whole Christian world to rejoice, that the *sun of righteousness*, or the Saviour of men, who for our sakes humbled himself, and became *obedient to death*, hath risen again, with *healing under his wings*,

Viewing the material sun in all its glorious qualities, and beneficial operations upon every object within its system, how are the whole eclipsed and surpassed by him.

* Matt. v. 43.

† Psalm lxxxiv. 11.

who is the sun of our immortal souls, of whose grace and merit this is but a faint emblem ; and from whom issues, in bright and gentle beams, all the light and all the joy we experience now, or hope to enjoy hereafter ! The sun is, indeed, the most splendid object in the Creation ; but the other is the source of all that is comely and attractive, both in nature and grace. The material sun runs its course and completes its circuit, to fulfil its original destination, from day to day, with unwearied regularity, activity, and ardour. And has not our divine Redeemer also finished the great career of our salvation, by performing all those miracles of mercy for which the Father of the Universe ordained him from everlasting, and is he not still proclaimed through the Gospel as the sovereign luminary of his spiritual dominions ? The material sun diffuses vitality, illumina-

tion, vegetation, and joy through all animated Nature, whether in our own planet, or in the worlds around us. And does not the sun of righteousness dissipate the ignorance which darkens the intellectual region, enlighten our minds in all saving knowledge, and spread abroad in the human heart every grace and virtue, so that we may be purified from corruption, and at length obtain admission into the kingdom of glory, where we may contemplate the Divinity without being confounded, and become perfect as the angels of God in heaven !

Were our natural sun to withdraw his beams for a length of time, the whole space would instantly be as black as night, and “chaos would come again.” Now if it were possible for us to survive such a loss, and to endure so dreadful a condition,

with what exuberant joy and gratitude should we not hail the return of the solar rays to our hemisphere, and rejoice in the light and heat of the sun, the soul of our system!

Before the *day-spring from on high* visited our abject state, the depth and degeneracy in which ignorance and impiety had plunged us were as deplorable. The moral world was in a state of darkness and corruption, with little knowledge of the principles of duty, and still less of a state of rewards and punishments hereafter. A remembrance of the paradisaical world, where righteousness prevailed and happiness was experienced, did indeed continue among a chosen few; and a hope prevailed, founded upon the promise given, that divine light would again arise upon the earth, and the powers of darkness be dispelled.

It was then that the compassionate Friend of our race came to seek and to save that which was lost. He saw us abandoned and forlorn, without help, and while we were in this condition, he entertained the most gracious intentions towards us, and not only redeemed our souls from destruction, but crowned us with loving kindness and tender mercy. The long-promised and long-expected deliverer, after a dismal period of apostacy and idolatry, arose upon the benighted world, and brought life and immortality to the clearest light, for the direction and comfort of the sons of men, by his Gospel.

It might be reasonably imagined, that the blessings resulting from this great salvation would have been welcomed, by all who heard the joyful tidings, with sentiments of unbounded gratitude; and that the objects

of such unspeakable mercy, thus translated from *darkness to light*, by Him who is the *light of the world*, would have hailed his appearance with religious joy, and submitted themselves to his unerring direction with grateful and constant obedience.

Could it be credited, but for the evidence of fact and experience, notwithstanding his kindness for the worthless and unthankful, that he was, and still is, *despised and rejected of men*? Does not the earth return the fructifying warmth of the Sun with a profusion of verdure, foliage, and flowers? Do not the irrational tribes greet his rising every morning, and rejoice in his presence through the day, with apparent gratitude? Are not all the orbs which circulate around him, and are preserved and cherished in their respective spheres by his ministry, continually rendering him perpetual ho-

image, by maintaining invariable order and harmony? Now are we not hereby taught by all Nature, what is due to the reception of so many higher mercies, and do not the material works of God upbraid us with ingratitude to our best Benefactor and Redeemer?

That he was contemned and persecuted by the Jews, among whom he performed so many wonderful works, excites our astonishment, and calls forth our reprobation;—what, then, shall be said for those, who, notwithstanding the blaze of evidence which surrounds his religion, still continue to live in opposition to its rules, and in violation of its ordinances?

Many who have been baptized into his name, and who affect the title of Christians, yet rank with his open enemies, give the lie

by *wicked works* to his word ; and even betray him *with a kiss*, or with the profession of peace on their lips. Is he not robbed of his honour, by all who would reduce him to the mere level of our imperfect nature ? And can they be accounted his friends, who deny to his nature the prerogative of divinity ; who deprecate the merits of his obedience and sufferings ; who blaspheme the sacrifice on the cross, which constitutes the glorious distinction of his faith ; who sully the lustre of his Gospel, by substituting the form for the power of godliness ; or who tarnish, by an unholy life, the graces which shone so sweetly and eminently in him, and which have been set before us for our imitation ?

But as the natural sun has its *maculæ*, or dark spots, which float upon its surface ; so the sun of righteousness is occa-

sionally rendered obscure by external persecution of his church, by the prevalence of erroneous doctrines, and by the conduct of those who, while they are called after his name, and pretend to be his followers, dishonour their profession, and *crucify the Son of God afresh* by their evil deeds.

But as, in the natural world, the solar orb continues to shed its powerful influence on all the objects within its sphere, and carries on its appointed work in sustaining the harmony of the system ; so in the spiritual world, He who is the light and the truth, will still uphold his cause, and diffuse his blessings to all the members of his church, in every age, till they are rendered meet for glory.

The planetary system to which we be-

long, neither existed from eternity, nor will it endure for ever. Even the glorious luminary which irradiates and enlivens it, was kindled at the command of Omnipotence ; and we are assured, also, on the same authority, that the hour is coming, when the *sun shall be darkened, and the moon shall not give her light.* Having fulfilled its destined part in the universe of systems, our spacious and magnificent one must give way to another, and *new heavens and a new earth* shall arise in the room of the present world.

But notwithstanding these changes, the sun of righteousness shall shine in resplendent majesty through the countless ages of eternity ; for he is *God over all, blessed for ever.* In the heavenly kingdom which will succeed this earth, *there will be no need of the sun, neither of the moon, to*

shine in it ; for the glory of GOD doth lighten it, and the Lamb is the light thereof.*

As every created splendour, and artificial illumination, fades away amidst the refulgence of the solar light, so will all the glory of man, whether consisting of moral excellence, intellectual acquirement, or extensive achievements, sink to nothing, and be utterly lost, at the consummation of all things, when HE who is the fountain of truth, shall literally be ALL *in* ALL !

That the heathen nations, among whom the traditional evidence of a Supreme Creator was lost or perverted by superstition, should make the sun the primary object of their religious adoration, cannot be a matter of wonder. Much must be con-

ceded to the feelings of men, who experienced, under the most fertile climates, the powerful influence of this luminary upon all the luxuries of vegetation.

Who can behold the rising of the sun, even in our northern region, without admiration, and a devotional sentiment to the great Lord of All? But in countries where the scenery is richer, and the sky more serene, such a spectacle must increase in lustre and grandeur. The description of it by a Roman poet, is very happy:

Et jam Mygdoniis elata cubilibus alto
 Impulerat cœlo gelidas Aurora tenebras,
 Rorantes excussa comas, multumque sequenti
 Sole rubens : illi roseus per nubila seras.
 Advertit flamas, alienumque æthera tardo
 Lucifer erit equo ; donec Pater igneus orbem
 Impleat, atque ipsi radios vetet esse sorori*.

* Statius ; Thebaid, ii. 134.

Aurora, rising from her eastern bed,
 Glauc'd on the skies, and night before her fled ;
 Then shook her locks that dropp'd with silver dew,
 And glow'd resplendent with the sun in view.
 Bright Lucifer* imbib'd the orient beam,
 And turn'd to other skies his ling'ring team :
 Now the replenish'd sun his orb reyeals,
 And dims the silver on his sister's wheels.

That so glorious an object should inflame
 the affections, and make a deep impression
 upon the heart, was natural ; and therefore,
 when we behold the Persian and Indian
 prostrate before the rising sun, piety may
 wish them better knowledge, but pity may
 compassionate the delusion, though it can-
 not excuse the error.

Considering the blessings which this
 wonderful body is the instrument of con-

* The morning star was so termed by the an-
 cients.

veying to infinite myriads of beings, it is not surprising that his presence should be welcomed by the simple children of Nature with an expression of joy and gratitude, which, by repetition, would become an act of religious service. Hence the rise of idolatry seems more reasonably accounted for, than in the laboured disquisitions which would ascribe it to a veneration of departed heroes, or the traditional remembrances of remarkable events (g).

There have been some who indulged the notion, that the sun is the receptacle of souls departed in a state of purity, that being the great fountain of light, opposed to utter darkness. This opinion certainly is more pleasing and agreeable to reason, than the wild fancy taken up by a learned man of our nation, who maintained, in a

very ingenious treatise, that the body of the sun is the region of infernal torments. Among other curious reasons for this strange hypothesis, he assigns the following :

“ St. Austin telleth us, that malefactors, in his days, and such as did not “ pay their debts, were by their judges “ condemned to be exposed to, or laid “ a-roasting in, the sun, which in Africa, “ where he lived, and where the sun shineth “ violently hot, was an extreme punishment. Nor is its heat only troublesome; “ its light, too, may offend. For if we “ look upon it in its full meridian strength, “ we shall be dazzled, not delighted; and “ if our eyes, like those of owls, were bereaved of the defence of their lids, we “ should no more endure the piercing light

“ of his beams than they ; but if obliged
“ to a constant beholding of them for any
“ time, should be thereby reduced to a
“ state of perfect darkness.

“ Now if the sun is apt to be so trouble-
“ some and offensive to us here, where we
“ are at such a mighty distance from it ;
“ what do we think would it be, if we
“ were cast into the very body of it, and
“ made capable of subsisting in it, and
“ enduring all those sharp and dreadful
“ torments that so vast and vehement a fire
“ must inflict (h)?”

This, it must be confessed, is suffi-
ciently descriptive ; but the learned author
was not aware, that the foundation of his
system was a vulgar error. It was a gene-
ral notion down to his time, and it has
continued to ours, that the sun is an ig-

nited globe, the heat of which infinitely exceeds that of red-hot iron; the consequence of which assumption is, that the inhabitants of Mercury and Venus must be salamanders, while the condition of those of Jupiter, Saturn, and the Georgian, must be most miserable.

Unfortunately, however, for the credit of hypothetical speculatists, it has been philosophically proved, that the sun is not a body of fire; and that the intensity of heat it produces is not in the rays themselves, but is the consequence of their union with our atmosphere, and the power of reflection. This is demonstrated by the simple circumstance of the great cold felt on the tops of mountains, while persons on the sides, and in the vallies, are over-powered with heat. Justly, therefore, is it concluded, that the sun is a solid body,

with an immense atmosphere of light, the particles of which only occasion heat by their contact with the medium through which they pass (*i*).

So far, then, is the sun from being an object of dread and horror, which the dismal hypothesis we have been considering tends to represent it, that, in fact, we have new reasons to admire the wisdom and goodness of God in its creation.

The vast magnitude of this glorious body, being infinitely larger than the earth, seems to render it a fit habitation for the *spirits of the just made perfect**.

We are told, that the number of happy disembodied spirits surrounding the throne

* Heb. xii. 23.

of the Redeemer, surpasses all power of calculation*. When, therefore, we consider the immense space occupied by the solar orb, and how generally throughout the Sacred Volume, the sun is made use of as an image of the divine goodness, and the emblem of the Lord of Life, may we

* Rev. vii. 9. Our translators have narrowed the sense of this passage, and considerably weakened its force and elegance, by substituting “*no man*,” instead of “*no one could number the great multitude*.” In the original, it is *καὶ οὐδεὶς οὐχλος πολυς, οὐ* *αριθμοσας αὐτον οὐδεὶς ηδυνατο.* “And behold, a great multitude; which *no one had power to number.*” This implies fully, that no skill in enumeration, not even that of angelical beings, was equal to the task of reckoning the happy spirits of all nations and kindreds, and people and tongues, which stood before the throne of the Lamb. What an exalted and consolatory view does this give us of the extent of redemption, and how completely does it destroy the gloomy and uncharitable dogma of reprobation!

not humbly be permitted to think, that it has some relation to the state of grace and glory, as well as being the fountain of material light and comfort to our system?

Although the Scripture determines nothing positively with respect to the place of departed souls, till the day of judgment, yet it contains enough to shew us, that it is an intermediate state, and not the consummation of happiness or misery.

The inheritance of the Saints is said to be in light*; and it is declared by the same authority, that the degrees of future bliss are various, according to the condition and quality of the separate spirits; *There is one glory of the sun, and another glory of the moon, and another glory of*

* Col. i. 12.

the stars ; for one star differeth from another star in glory.*

It is observable, that the apostolical discourse containing this view of distinct states of celestial glory, is solely directed to the important purpose of proving the doctrine of a future state, and the resurrection of the dead. Now what analogy could there be between the glorified vehicles of the righteous, and the heavenly luminaries ? The comparison is certainly elegant ; yet the inspired writer does not express himself in the strict language of comparison. He maintains, that the sun has a pre-eminent glory over the other celestial bodies, and that the glory of all these differs from the *terrestrial glory*, by which we must, of course, understand the excellence of hu-

* 1 Cor. xv. 41.

man nature. The Apostle's reasoning, then, amounts to this ; that, however great and splendid may be the qualities and merits of men, the glory of the beings inhabiting the superior orbs transcends them by various degrees. That the stupendous structure and brilliant lustre of the heavenly bodies infinitely exceeds our earthly frames, is too plain a truth to need the attestation of an apostle ; we must therefore conclude, that this reference to the separate glories of the sun, the moon, and the stars, was intended for a higher object of consideration.

And what that is can only, I think, be gathered from the passage itself, illustrated by other portions of Holy Writ, particularly that of Job, where the morning stars are said to have sung together at the Creation, and that all the sons of God then

shouted for joy *; and the declaration of our Lord to his Disciples, *In my Father's house are many mansions: I go to prepare a place for you* †.

That the sun shall be darkened at the last day, and probably be then extinguished, is so far from affecting this hypothesis, that, on the contrary, it tends to give it support. The state of the blessed, as hath just been observed, is but a preparatory or an intermediate one. It is true, they are in the hands of GOD, and no evil can touch them ‡, because they are in a place of security, to which the spirits of darkness have no access; but the happiness they enjoy is only a prelude to an infinitely higher state of glory, to which they will be admitted after the final judgment. If the

* Job, xxxviii. 7.

+ John, xiv. 2.

‡ Wisd. iii. 4.

souls of men, on quitting their bodies, were to be fixed in the absolute state of happiness or misery, to what end are they to be called before the tribunal of God at the consummation of all things ? But the scriptural account of that tremendous event, sufficiently disproves this notion ; for it expressly declares, that then, and not before, shall the *righteous come, and inherit the kingdom prepared for them from before the foundation of the world** ; and that then, also, shall the wicked receive their doom of dwelling in everlasting fire, **PREPARED FOR** the devil and his angels.

From this description, and the declarations of the Almighty Judge, it is evident, that the condition of the righteous and the wicked, in the interval between death and

* Matt. xxv. 34.

the resurrection, is that of expectation: the former that of hope and joy, and the latter that of misery and despair.

Now if the centre of the system be the seat of rest and security, and for which it appears to be so well adapted, the circumstance of its destruction at the last day, perfectly well agrees with what the Scripture has revealed concerning the state of departed souls, as being a temporary residence only, from which they are to be removed into the kingdom prepared for them, after they have undergone their final trial.

The Almighty has created nothing in vain, and every part of the visible Creation abounds with life. It is not reasonable to suppose, that any one of the bodies which are scattered throughout the immeasurable

expanses of the universe, is without inhabitants; and no greater objection can be raised to the peopling of the Sun, than to that of the Moon, Venus, Mercury, or the other planets.

There is something sublime and elevating in the thought, that every solar ray which pervades our atmosphere, brings us intelligence from the world of spirits, and continually maintains a communion with the region of light and bliss.

The Scriptures uniformly represent the condition of the wicked under the term of *darkness*, as they do the character and future state of the righteous by the opposite term of *light*. Thus, in the Epistle of St. Jude, the Angels which kept not their first estate, but left their own habitation, are said to be reserved in everlasting chains

under darkness, unto the judgment of the great day.

Now in the solar orb there can be no darkness at all ; but one unclouded day, and an unchanging season must there continually prevail.

There is, literally, *no night there** ; so that the sublime description of the evangelical prophet may be here fitly adopted and applied: *The Sun shall be no more thy light by day, neither for brightness shall the Moon give light unto thee; but the Lord shall be unto thee an everlasting light, and thy God thy glory*†.

To that common centre, the spirits of the virtuous may be constantly arriving

* Rev. xxi. 25.

† Isaiah, lx. 19.

from various parts of the system, so as to constitute that social assemblage and union described by our Lord : *And they shall come from the east, and from the west, and from the north, and from the south, and shall sit down in the kingdom of God**.

If on this globe we possess so many advantages, and opportunities of contemplating the works of the Almighty, how much greater may we imagine their powers, and extensive their observation, who dwell in the centre of light ?

Our great poetical commentator has expressed this thought most happily, though he makes the Sun only a place of angelical residence. It is observable, that in the

* Luke, xiii. 29.

account of Satan's escape from the region of darkness, and flight to the upper world, Milton describes the fiend as being obliged to put on the appearance of an Angel of Light, in his approach to the Sun, to learn the abode of man from Uriel. The address of Satan, and the answer of Uriel, aptly paint the sublime view afforded to a beholder in the centre of our system;

Brightest seraph, tell
 In which of all these shining orbs hath man
 His fixed seat, or fixed seat hath none ;
 But all these shining orbs his choice to dwell ?

To this artful question, Uriel replies by a description of the Creation, and then points the inquirer to the object of his research :

Look downward on that globe, whose hither side,
 With light from hence, tho' but reflected, shines :

That place is earth, the seat of man ; that light
 His day, which else, as th' other hemisphere,
 Night would invade ; but there the neighb'ring moon
 (So call that opposite fair star) her aid
 Timely interposes, and her monthly round,
 Still ending, still renewing, thro' mid heaven,
 With borrow'd light her countenance triform
 Hence fills, and empties, to enlighten th' earth,
 And in her pale dominion checks the night.

PAR. LOST, B. iii.

In that remarkable representation of the different conditions of the righteous and the wicked after death, given by our Lord, in his usual parabolical mode of instruction, the rich man is described as lifting up his eyes in torment, and beholding Lazarus afar off in a place of rest. It is added, that between the two places there is a great gulf fixed, so as to render a passage from the one to the other utterly impossible.

Notwithstanding this, it is evident that

the souls of the wicked have occasional views of the blessed, which undoubtedly only serve to heighten the sense of their own loss and misery.

In another parable, the state of the wicked after death is termed that of *outer darkness**; not that they who are there detained in fearful expectation of judgment, are unable to discern their own wretchedness, or the happiness from which they are for ever separated; but to denote the want of every comfort, and the total loss of hope.

To what part of space they are driven, it would be needless to inquire, and presumptuous to determine; although it is not improbable, but that they occupy the

* Matt. xxii. 13.

regions between the planets, or the parts beyond them, without having any resting place: while the spirits of the just are associated in a state of serenity, waiting with joyful confidence the period, when they shall be removed to a still higher seat of glory and usefulness, and when they shall be admitted into a more intimate communion with the Almighty.

This sentiment is beautifully expressed by that truly Christian poet, Dr. Young, whose principal work contains many admirable illustrations of scriptural difficulties and obscurities. His description of the progressive state of the virtuous, and of their ultimate perfection in the centre of bliss, shall close this section :

He, the great Father, kindled at one flame
The world of rationals ; one spirit pour'd

From spirit's awful fountain; pour'd himself
Thro' all their souls, but not in equal stream,
Profuse or frugal of th' aspiring GOD,
As his wise plan demanded: and when past
Their various trials, in their various spheres,
If they continue rational as made,
Resorbs them all into himself again,
His throne their centre, and his smile their crown.

THE MOON.

Soon as the evening shades prevail,
The Moon takes up the wond'rous tale,
And nightly to the list'ning earth,
Repeats the story of her birth.

ADDISON.

OF all the celestial bodies, the moon, as being the nearest to us, is the most familiarly known, and her phenomena are most accurately ascertained. Though generally ranked in the order of the planets, she is only a satellite, and is indebted for the superior distinction which she has obtained, to her affinity with the earth; to the reverence paid her by the ancients, on

account of her influence and utility ; and perhaps, also, to the manner in which her creation is recorded in the scriptural cosmogony, where it is said, that *God made two great lights ; the greater light to rule the day, and the lesser light to rule the night**.

Notwithstanding this declaration of their inspired historian and legislator, in which probably there was an intention of guarding the Jews from the worship of the sun and moon, it is certain that there was no species of idolatry to which that people were more addicted than this. And it is observable also, that of these two imaginary deities, Ashtaroth, or the queen of heaven, had the preference in their estimation.

* Gen. i. 16.

This worship of the two great luminaries, and particularly a marked attention to the moon, was far more ancient than the time of the Jewish polity, as appears from the apologetic observation of Job: *If I beheld the sun when it shined, or the moon walking in brightness; and my heart hath been secretly enticed, or my mouth hath kissed my hand; this also were an iniquity to be punished by the judge; for I should have denied the God that is above**.

This description of the empress of the night, is touched with inimitable elegance and exactness. The *moon walking in brightness*, is an accurate delineation of her perceptible motion, and silvery lustre. It also seems to denote the ground of that profound respect which was paid to this

* Chap. xxxi. 26, 28.

luminary among the Arabians, where the frequent contemplation of her majestic appearance, led to her elevation as the second deity.

That people computed their year by the periodical revolutions of the moon, and by her motion they also regulated their religious festivals. In this respect they were imitated by other nations, particularly by the Jews, whose public feasts were determined by the lunar periods. Thus, the author of the apocryphal book called *Ecclesiasticus* says, *He made the moon also, to serve in her season for a declaration of times, and a sign of the world. From the moon is the sign of the feasts, a light that decreaseth in her perfection. The month is called after her name: increasing wonderfully in her shining, being an instrument in the armies above, shining in the*

firmament of heaven. The beauty of heaven, the glory of the stars, an ornament giving light in the highest places of the Lord.*

Next to the superstition of idolatry, may be considered that which prevailed almost universally among the ancient nations, and which is not yet wholly eradicated, of a supposed power in these luminaries, as also in the other planets, over the fortunes of mankind. This notion of a sidereal influence upon the productions of the earth, apparently arose from the belief, that the celestial bodies were the seats of peculiar deities, from whence they beheld, and took a concern, according to their natures, in the affairs of mortals. This delusion gave rise to the vanity of judicial

* Eccles. xlivi. 6, 9.

astrology, into the practice of which many men of eminence were formerly misled, from a very unwarrantable desire of knowing the issue of events before the time.

The observation of the lunar influence upon the ocean, or of the rising of the tides according as the moon comes to the meridian, might have contributed to strengthen the notion that she has an effect upon plants, animal bodies, and the weather. But though this is now universally exploded as a vulgar error among men of science, it is to be lamented that the body of the people are kept in the belief of it, by those otherwise useful publications, the almanacks, in which the changes of the weather, and even political events, are foretold every year, with as much gravity and confidence as if they were mathematical demonstrations. Another circumstance

seems to have contributed towards this popular delusion: and that is, the variable appearance assumed by the moon when she is on the increase, and also on the wane. Sometimes this planet is horned, then semicircular; now gibbous, and next full and round. At one time she enlightens us the whole night, at others only a part of it; now she is in the northern hemisphere, and next in the southern.

From these variations, and the universal practice of measuring time, and determining the celebrations of festivals by the periods of her return, it was concluded that the moon had a perceptible power on the productions of this globe.

But though much may be allowed to the prejudices and ignorance of the ancients, who had not the means of making accurate

observations upon the celestial bodies, there can be no excuse now for the encouragement of such a fallacy, since it is proved beyond all reasonable doubt, that the moon is a globe which has sea and land, mountains and valleys, clouds and vapours, day and night, winter and summer, in the same manner, though varying in degree, with our own planet.

The geography of the moon was first delineated with accuracy by Hevelius, after Galileo's immortal discovery of the telescope. By his observations with that instrument, he was enabled not only to distinguish the lunar mountains, but to ascertain their heights and extent. These, considering the magnitude of that planet, when compared with our earth, are very great; the lunar Apennines running above three hundred miles, and the chain of

mountains to which that astronomer gave the name of Taurus, exceeding five hundred miles in length. The heights of them vary; the loftiest, according to Hevelius, is less than three English miles; but a later observer has gone so far as to make the lunar mountains five times higher than those of the earth. Many of them have craters of a prodigious breadth and depth, several eruptions from which have been seen and described by one of the first astronomers of the present age.

Indeed, as the surface of the moon exhibits more inequalities than the earth, and as its mountains are evidently more volcanic than ours, it seems as if the substance of that planet is of a firmer and more refractory texture than the terraqueous globe. This is further confirmed by the circumstance, that the lunar continents far ex-

ceed the seas and oceans thereon. That there are springs and rivers in the moon, cannot be doubted; and it appears certain, that there are large collections of waters there, answerable to some of the most extensive lakes on our globe; but these bear no proportion to the vast ridges of high lands stretching themselves in a continued course from one pole to the other, and spreading out again in a variety of directions, and without any material interruptions, from east to west.

Hence may be accounted for in some measure, the extreme rarity of the lunar atmosphere; for though some astronomers have denied that the moon is surrounded by any, its existence has been clearly ascertained by observations; from whence it appears, that the higher mountains in the dark hemisphere, and near the illumi-

nated edge of the planet, have a fainter light, in proportion to their distances from that edge; which proves that the moon has a refracting atmosphere. This has been farther demonstrated by the observation of a faint twilight on the moon. Now, as this crepuscular light necessarily depends upon the quantity and height of matter capable of reflecting the solar rays, here is all the evidence that can be required for the existence of a lunar atmosphere.

Those astronomers who have denied the reality of such an atmosphere, principally founded their objection on the circumstance of the fixed stars being seen close to the edge of the moon immediately before their occultation. By careful observations, however, it has been found, that there is a gradual diminution of light in the stars before their actual disappearance; which proves that there is an atmosphere sur-

rounding the lunar globe, although it is much rarer than that of our earth, being at least eight times less in height.

That the moon has clouds and vapours, follows from the preceding demonstration; but the fine texture of its atmosphere will not support such large and opaque masses as are frequently suspended over us, and discharge themselves in torrents of water upon the earth.

The situation of our sister planet in this respect seems to resemble the antediluvian or paradisaical one, as described in the Mosaic history of the infant world, when *the Lord God had not caused it to rain upon the earth, and there was not a man to till the ground. But there went up a mist from the earth, and watered the whole face of the ground**,

* Gen. ii. 5, 6.

All the purposes of vegetation may be there answered as fully as in many parts of the earth, where the rains are comparatively but dews, to those which fall in other climates.

Although the moon has the same year with us, making its revolution round the sun in the same period of time, yet as the declination of its axis is considerably smaller than ours, there must be less inequality of seasons on that planet than what we experience.

But, perhaps, the most singular circumstance with respect to this luminary is, that one half has never any darkness, being constantly enlightened, in the absence of the sun, by the earth acting towards it as a moon; while the other hemisphere has an alternate fortnight of light and darkness.

That a body so constructed, and exhibiting such a variety of appearances, corresponding to the diversified scenery of our world, should be a solitary desart, is by no means agreeable to the analogy of Nature, the dictates of reason, nor even to the sublime views of the divine wisdom and goodness opened to us in the Holy Scriptures.

As the Almighty hath created nothing in vain, we have no right to conclude that where he has displayed so much beauty, and for which so many means of utility and comfort have been provided, no intelligencies reside to enjoy his blessings, and to serve the Donor.

The royal Psalmist seems clearly to have had other sentiments on this exalted subject, when in a high strain of devotional

contemplation, he breathed forth this exclamation: *Praise him, sun and moon, praise him, all ye stars of light**. This address follows that made to the various orders of celestial intelligencies, as that does a general call upon the heavens to praise the Lord. It is observable, that a marked difference is made by the inspired penman of this sublime ode, between the inhabitants of the upper and the nether world. Of the former it is said: *Let them praise the name of the Lord, for he commanded, and they were created. He hath also established them for ever and ever; he hath made a decree which shall not pass.* But in his call upon *kings of the earth and all people*, the Psalmist says: *Let them praise the name of the Lord: for his name alone is excellent, his glory is above or beyond the earth and heaven.*"

* Psalm cxlviii. 3.

When it is said of the celestial worlds, that they are *established for ever*, and that the decree of their preservation is immutable, it can never relate to the mechanical order of the planetary system, which the Scriptures in other places frequently declare shall *vanish away like smoke, and pass away with a great noise, while the earth, and the works that are therein, shall be burnt up**,

The declaration, therefore, and the call for thanksgiving grounded upon it, must have a reference to a higher subject, even to a regular order of beings, established by infinite wisdom for an everlasting course of bliss and utility.

To this the concluding apostrophe of the enraptured Psalmist, addressed to the sons

* Isaiah, li. 6. 2 Peter, iii. 10.

of men, has also an allusion, where they are reminded that, however splendid and excellent the heavenly hierarchies may be, the glory of the Lord, or that in which he is encircled, is beyond them; or, as the original will bear to be rendered, it is at an infinitely greater distance. Here then seems to be a climax worth considering. 'The call is not in the mere strain of poetry upon inanimate things; but first upon the angelic hosts; then upon the inhabitants of the sun, the moon, and the stars of light, as composing a regular train, fixed and regulated by the king of Eternity for the purposes of his glory; and then, lastly, upon the children of men, in all their gradations of rank, influence, and capacity.'

But to return to our observations on the moon.

The various uses which this satellite

renders to the earth, are repaid in an ample proportion, by reflecting the solar light to her, and by probably occasioning a similar flux and reflux of the waters, called tides, as are experienced in our seas.

Here I shall quote the words of an acute astronomer, especially as his most entertaining and scientific "Treatise on the "Planetary Worlds" is become extremely scarce. "The lunar globe," says the learned Huygens, "is divided into two "parts, in such a manner, that those who "live on the one side never lose sight of "our earth, and those who live on the "other never enjoy it, except it be a few "who live on the confines of each of these, "and who lose, and see us again, by "turns. The earth must seem much "greater than the moon doth to us, as "its diameter is four times larger. But "that which is most surprising is, that

“ both night and day they see it always
“ in the same part of the heavens, as if it
“ never moved: some of them behold it
“ in the zenith, others a little above the
“ horizon, and some again exactly on the
“ horizon, still turning upon its own axis,
“ and presenting them every twenty-four
“ hours with a view of its various coun-
“ tries, even of those that lie near the
“ poles, and some which perhaps are as
“ yet unknown to us.

“ They have the earth in its monthly
“ wane and increase; they see it half, and
“ horned, and full, by turns, just as we do
“ the body of the moon. But the light
“ they receive from us is five times greater
“ than that which we receive from them;
“ so that in dark nights, that part of the
“ moon which hath the advantage of being
“ turned towards us, receives a very glo-
“ rious light from our globe.

“ Their days are always of the same
“ length with their nights; and the sun
“ rising and setting to them but once in
“ one of our months, makes the time,
“ both of their light and darkness, to be
“ equal to fifteen of our days.

“ If the bodies of the Lunarians were
“ of the same materials as ours, those who
“ have the sun pretty high in their ho-
“ rizon, would be nearly burnt up in such
“ long days. This will be the case with
“ those who live upon the borders of the
“ two hemispheres; but those who dwell
“ under the poles, will have just about as
“ much heat as our whale-fishers have on
“ the coast of Greenland and Nova Zem-
“ bla in the middle of summer. I call
“ those the poles of the moon, round
“ which the fixed stars seem to turn to
“ its inhabitants, which are different from
“ ours, and also from those of the eclips-

tic, although they move round these at
the distance of five degrees in a period
of nineteen years*."

Great and numerous are the benefits rendered by this luminary to our planet. How dismal would be our wintry nights, especially in the more northern regions, without her cheering influence! This light gives unspeakable comfort to the inhabitants of the polar circles during the total absence of the sun, or after his short and partial appearance on their horizon. Again, in the season when the husbandmen are actively engaged in gathering in the fruits of the earth, this friendly planet rises at full for three or more nights successively about the same space of time,

* *Cosmotheoros, sive de Terris Cœlestibus, earumque ornatu, conjecturæ, &c.* lib. ii. p. 119, edit. 1699.

thus enabling them to continue their labours after the heat of the day, and thereby to complete the “joy of harvest.”

To the mariner, in his long and perilous voyage over the trackless ocean, the moon is of incalculable advantage, not only by affording him light, but in enabling him to make accurate observations for correcting his course and ascertaining his longitude.

Her influence upon the tides of the ocean is accurately determined, and the times of their returns at different places are exactly known. This flux and reflux is of essential benefit in a variety of respects. It carries on an intercourse between different countries, cleanses the channels of rivers, enriches the adjoining lands with manure, and conduces to the health of

men, as well as to the progress of a vigorous and beautiful vegetation.

And this probably is still farther promoted by the influence of the moon upon the atmosphere; which being a lighter fluid than water, and much nearer to the lunar orbit than the surface of the sea, cannot but be sensibly affected by her approach; whence there must be greater and higher tides in the air than in the ocean.

By the eclipses of the moon, the sciences of astronomy and geography have been rendered more perfect, and by their assistance many disputed periods of ancient history have been determined, and the accounts of time been regulated.

Such being the benefits, and so great the beauties, exercised and displayed by

this planet, with what propriety is she adopted as an emblem of the Church, in the elegant imagery of inspired poetry, which thus describes her, in conjunction with the fountain of light: *Who is she that looketh forth as the morning, fair as the Moon, clear as the Sun?**

As the light of the moon is borrowed

* *Canticles*, vi. 10. The whole verse is in the original exquisitely beautiful; but its force, elegance, and even meaning, are lost in the obscurity of our translation: *Fair as the moon, clear as the sun, and terrible as an army with banners.* This last comparison has no sort of affinity to the preceding; but if we render the passage according to the Hebrew idiom, *splendid as the starry host*, the climax rises to the height of sublimity. The word **ZEBAOOTH**, or *host of Heaven*, is a common phrase in Scripture for the stars, including the sun and moon; but here the Royal Poet has adopted a word denoting a body of troops glittering in armour, to distinguish the stars from the former luminaries.

rom the great central source of light, and is only reflected to us from her surface; so the Church obtains all her glory and perfection, her gifts and excellencies, from the **SUN OF RIGHTEOUSNESS**, *out of whose fullness* she has continued to *receive* in all ages, and under every dispensation, *grace for grace**.

She is indeed fair and lovely, shining *as a light in a dark place*, and shewing forth continually the great work of redemption, which was indicated and prefigured in the **NEW MOONS** under the shadows of the law, and in the Levitical service.

As long as the sun shall dispense his rays throughout our system, so long will

* John, i. 16.

the moon be obedient in her course, and, following his direction, she will regularly bestow her borrowed light for the comfort and guidance of men. In like manner, the Church of GOD shall endure while the work of mediation continues; and by her influence and direction will the children of the kingdom, the heirs of immortality, be rendered meet for *the inheritance of the saints in light**.

The moon is frequently obscured by the clouds of our atmosphere, and sometimes she suffers a partial or total eclipse, as the earth interposes between her and the sun. Similar to this has been, and ever will be, the condition of the Church, while she is in her probationary and ministerial state. At certain seasons infidelity and heresy,

* Col. i. 12.

licentiousness of principles and profaneness of manners, so thicken the atmosphere, that the light of religion is either totally hidden, or but dimly seen. Notwithstanding this the Church endures, and continues her steady course, though men behold her not, through the corruptions of the times.

The malevolence of the wicked cannot impede her progress; for though immorality, ridicule, and persecution, may occasion a temporary obscuration of her glory and influence, the power of Omnipotence maintains her in the orbit of truth and usefulness; and the word of immutable veracity hath declared, that *the powers of darkness shall never be able to prevail against her**.

There are some people who view an

* Matt. xvi. 18.

eclipse with fear and consternation, regarding the phenomenon as portentous of a particular calamity, or as the prelude of a universal dissolution.

Thus it is frequently with pious, but timid minds, on being obliged to witness the decay of religion, the prevalence of scepticism, and the troubles of the world. The triumphant progress of the spirit of darkness, manifested in the prevalence of impiety, and in the depression of virtue, occasions in the tender and benevolent mind, fear and grief approaching to despondency.

In this dismal scene, such persons, not being able to discern any prospect of light and deliverance, are apt to take up the lamentation of the prophet: *Will the Lord cast off for ever, and will he be favourable no more? Is his mercy clean gone for*

*ever? Doth his promise fail for evermore?
Hath God forgotten to be gracious? Hath
he in anger shut up his tender mercies?*

A due consideration of the infinite goodness of the Almighty, and a retrospective view of his providential care of the Church in past ages, will, however, soon correct this murmuring spirit, and turn its complaints into the language of gratitude and confidence, as expressed by the same inspired writer: *And I said this is my infirmity; but I will remember the years of the right hand of the Most High. I will remember the works of the Lord; surely I will remember thy wonders of old**.

The work of righteousness is still going on in the earth, amidst all the confusions

* Psalm lxxvii. 7—11.

which agitate nations and perplex individuals. The Sun of Righteousness illuminates and preserves his Church, notwithstanding the thick and gross darkness which appears to be spread out over all people; and the promise made to the Redeemer by the Eternal Father shall be fulfilled: *They shall fear thee as long as the sun and moon endure, throughout all generations. He shall come down like rain upon the mown grass, as showers that water the earth. In his days shall the righteous flourish, and abundance of peace so long as the moon endureth**.

* Psalm lxxii. 5, 7.

THE PLANETS.

Mystical dance which yonder starry sphere
Of PLANETS, and of fix'd, in all her wheels
Resembles nearest ; mazes intricate,
Eccentric, intervolv'd, yet regular
Then most, when most irregular they seem ;
And in their motions harmony divine
So smooths her charming tones, that God's own ear
Listens delighted. —————

MILTON.

THE harmony of the spheres has been a favourite theme with the poets; and though the Pythagorean doctrine, on which it is founded, of a supposed musical proportion in the distances and magnitudes of the planetary bodies, be merely fanciful, yet the representation of joy and gladness

in the motions of the celestial worlds, may be admitted as illustrative of the wisdom and goodness manifested in their construction and order.

Milton has most happily availed himself of this ancient opinion, in his description of the creation, particularly at the close of it, when the Almighty returns from his great work attended by the heavenly hosts.

—————up he rode,
 Follow'd with acclamation and the sound
 Symphonious of ten thousand harps that tun'd
 Angelic harmonies: the earth, the air
 Resounding (thou remember'st, for thou heard'st),
 The heavens and all the constellations rung,
 The planets in their stations list'ning stood,
 While the bright pomp ascended jubilant.

The poet has adopted the same analogy, and with equal, if not superior effect, when he compares the festivity of the angels in the immediate presence of the Omnipotent,

to the “ harmony of the starry sphere;” which

So smooths her charming tones, that God’s own ear
Listens delighted. —————

Inspiration has ascribed a voice to the celestial orbs, and made them, what they truly are, the universal preachers of righteousness, proclaiming to all rational creatures a great First Cause, and continual preserver of all things. *The heavens declare the glory of God, and the firmament sheweth his handy work. Day unto day uttereth speech, and night unto night sheweth knowledge. There is no speech nor language where their voice is not heard. Their line is gone out through all the earth, and their words to the end of the world**.

* Psalm xix. 1, 4.

And what is the subject of their ministration, and what the constant lesson which these brilliant instructors perpetually inculcate?

An apostolical commentator upon the works of Nature and of Grace, hath given the explanation in his censure of the heathens for falling into the gross impieties of polytheism.

That which may be known of God is manifest in them; for God hath shewed it unto them. For the invisible things of Him, from the creation of the world, are clearly seen, being understood by the things that are made, even his eternal power and godhead.*

So forcibly indeed do *the heavens de-*

* Rom. i. 19, 20.

clare the glory of God, that the intelligent and virtuous part of mankind in all ages have been drawn thereby into a devotional admiration of his power and goodness.

It is not so much the splendour of the scene, when the vast concave is bespangled with innumerable lights of different degrees of magnitude, that produces this sentiment, as the consideration of the regularity observed in the periods of their risings and settings, and the harmony of their respective motions.

This led one of the greatest philosophers of antiquity to frame the following elegant and striking argument in support of the existence of a Supreme Being, and of his active agency in the creation and superintendance of the universe.

“ If,” says he, “ there were men, whose
“ habitations had been always under
“ ground, in large and commodious houses,
“ adorned with pictures and statues, fur-
“ nished with every article of utility, con-
“ venience, and comfort; and if, without
“ stirring from that subterraneous habi-
“ tation, they should be informed of a
“ certain divine power and majesty, and
“ after some time the earth should open,
“ and they should quit their dark abode to
“ come upon the surface, where they might
“ behold the earth, sea, and the heavens;
“ consider the vast extent of the clouds,
“ and the prodigious force of the winds;
“ should behold the sun and observe his
“ grandeur, and perceive that the day is
“ occasioned by the diffusion of his light
“ through the atmosphere; and when night
“ has obscured the earth, these persons
“ should contemplate the heavens be-

" spangled with stars; the various appearances of the moon in her increase and wane; the rising and setting of the other luminaries, and the inviolable regularity of their courses; when, I say, they should behold all these wonders, and meditate upon them, it is impossible but that they would draw the conclusion, that there is an infinitely wise and powerful Creator, and that these are his mighty works*."

Equally excellent are the observations made by Cicero upon this passage.

" Let us imagine," says he, in the person of the stoic, " as great a darkness as was formerly occasioned by the irrup-

* Aristotle, as quoted by Balbus the stoic, in Cicero de Natura Deorum, lib. ii. The original treatise of the Stagyrite is unfortunately lost.

“ tions of Mount Ætna, and which are
“ said to have obscured the adjacent coun-
“ tries for two days, so that one man
“ could not know another; but on the
“ third, when the sun appeared, they
“ seemed as persons risen from the grave.
“ Now, if we should be suddenly brought
“ from a state of dismal darkness to see
“ the light, how beautiful would the hea-
“ vens appear to us! But because we are
“ accustomed to the spectacle, our minds
“ are not affected, nor disposed to search
“ into the principles of what always appear
“ in view; as if the novelty, rather than
“ the importance of things, ought to ex-
“ cite our curiosity.

“ Is he deserving the name of man, who
“ attributes to chance, instead of an intel-
“ ligent cause, the constant motions of the
“ heavens, the regular courses of the stars,

“ the wonderful proportion and connexion
“ of things, and all conducted with so
“ much exactness, that our reason itself is
“ lost in the inquiry?

“ When we see machines move artifi-
“ cially, do we doubt whether they are
“ the productions of genius and skill? In
“ like manner, when we behold the hea-
“ vens moving with a prodigious celerity,
“ and causing an annual succession of the
“ different seasons of the year, which vi-
“ vify and preserve all things, can we en-
“ tertain a doubt that this world is direct-
“ ed, I will not say only by reason, but
“ by a reason the most excellent and di-
“ vine? For, in short, there is no need
“ of seeking after proofs, as we need only
“ to contemplate the universal beauty and
“ harmony of Nature, to be satisfied that
“ all is appointed by Divine Providence.”

Such was the conclusion drawn by the wisest of the ancient heathens, from a view of the regularity observable in the construction and motions of the heavenly bodies; but how would their minds have expanded, and with how much greater copiousness would they have treated this sublime theme, had they possessed the helps and knowledge which modern science and discoveries open to us?

If they inferred a Supreme and an Infinite Intelligence, from a contemplation of his works by the naked eye; and if they reprobated with just severity those who attributed the production of all things to chance, would they not have been more enraptured with the belief of a Deity, and felt a still greater abhorrence of atheism, had they seen the provision made for the distant planets of our system, and been

enabled to view innumerable worlds beyond the reach of the unassisted eye?

Truly did a pious writer of our own country exclaim,

An undevout **ASTRONOMER** is mad!

Bereft, indeed, must he be of the rational estimate of his powers, and insensible of the proper use to be made of his knowledge, if the wonders which he is accustomed to behold in the silent and religious hour of meditation, do not raise his soul on the wings of faith and gratitude to the ever-present and all-directing **GOD**.

The glory of this island, who has been truly denominated the Prince of Philosophers, made the most noble application of his wonderful attainments and surprising discoveries. The whole of his wisdom and

knowledge was sanctified to the noblest purposes ; and in his deep researches into the secrets of nature, and the laws of matter and motion through the whole universal system, he constantly directs our attention to the great Author of all. Thus, in his elegant and perspicuous, though concise view of the arrangement and order of the celestial bodies, both regular and irregular, of the solar system, Sir Isaac Newton is careful to impress the mind with a due sense of the wisdom observable in the disposition of them.

“ Six primary planets,” says he, “ revolve about the sun in circles concentric with him, and with motions directed towards the same parts, and almost in the same plane. Ten moons revolve about the Earth, Jupiter and Saturn, in circles concentric with them, with the same direc-

“tion of motion, and nearly in the planes
“of the orbits of those planets. But it is
“not to be conceived, that mere mechani-
“cal causes could give birth to so many
“regular motions, since the comets range
“freely over all parts of the heavens in
“very eccentric orbits, and by this kind of
“motion pass with ease and rapidity
“through the orbits of the planets; and in
“their aphelia, where they move the
“slowest, and continue the longest, they
“recede to the greatest distances from
“each other, and thence suffer the least
“disturbance from their mutual attrac-
“tions.”

What can equal the force of reasoning exhibited by this illustrious man, in the following contemplation on Nature, and the questions thence proposed to the serious attention of the observer?

“ It is the principal thing that natural
“ philosophy ought to do, and it is indeed
“ the end of that science, that by a regular
“ chain of reasoning, we proceed from
“ effects to their causes, till at length we
“ arrive at the very first cause of all things:
“ that we not only explain the mechanism
“ of the world, but that we may be thereby
“ enabled to answer the following queries,
“ with others of a like nature: Whence it
“ is that the sun and the planets gravitate
“ mutually towards one another, while the
“ spaces between them are void of matter?
“ How it comes to pass that Nature per-
“ forms nothing in vain? Whence proceeds
“ the admirable beauty of the universe?
“ To what end were the comets made?
“ And whence is it that they move in orbits
“ so very eccentric, from and to all parts
“ of the heavens; whereas the courses of
“ the planets have the same direction, to-

“wards the same parts in concentric orbits?
“ Again, what hinders the sun and fixed
“ stars from rushing mutually against each
“ other? How it happens that the bodies
“ of animals are framed with such exquisite
“ art and wisdom, and for what purposes
“ their different parts are designed? Whe-
“ ther it be possible that the eye could be
“ framed without any acquaintance with
“ optics, or the ear without any knowledge
“ of sounds? Whence it is that the motions
“ of the body obey the direction of the
“ will; and what is that which we term
“ *instinct* in animals? Whether the sensory
“ of animals be not the place where the
“ substance of sensation is present, and
“ into which the sensible species of objects
“ are conducted by the nerves and the
“ brain, that they may be there perceived?
“ Lastly,” this great man concludes,
“ Whether from a right solution of these

“ queries, it does not appear that there is
 “ a Being, incorporeal, self-existent, intel-
 “ ligent, and omnipresent, who in infinite
 “ space, or as it were, in his own sensory,
 “ beholds accurately, and discerns tho-
 “ roughly, all things themselves; and by
 “ being ever present, comprehends them
 “ all within himself*?”

Again, in his profound work, entitled
 “ The Mathematical Principles of Natural
 Philosophy,” he observes, that “ This most
 “ excellently contrived system of the sun,
 “ planets and comets, could have had its
 “ origin from no other than an infinitely
 “ wise and all-powerful Being; and that
 “ upon the reasonable supposition of the
 “ fixed stars being centres or suns of simi-
 “ lar systems, all of them must be subject
 “ to, as all are indicative of, the dominion

* Newton's Optic, Ed. Lat. p. 314.

“ of one Supreme Intelligence ; especially
 “ as it appears that the light of the fixed
 “ stars is of the same nature with the light
 “ of the sun ; and that all these systems do
 “ mutually impart their light to one ano-
 “ ther.”

Such is the improvement which true philosophy makes of its observations and discoveries, agreeable to the sagacious remark of another profound inquirer into Nature, that “a little philosophy inclineth
 “ men’s minds to atheism, but that a depth
 “ in it brings them about to religion ; for
 “ while the mind of man looketh upon se-
 “ cond causes scattered, it may sometimes
 “ rest in them, and go no further ; but
 “ when it beholdeth the chain of them con-
 “ federate and linked together, it must
 “ needs fly to Providence and Deity*.”

* Lord Chancellor Bacon.

From the harmony observable in all parts of the Creation, and the analogies subsisting between objects that on an ordinary and superficial view appear very dissimilar, a uniformity of design is so evident, that it is wonderful how men of any thought or discernment could ever have fallen into scepticism and infidelity.

This uniformity and analogy will be more apparent, if we take only a cursory view of the solar system, and the regularity of the planetary motions, the wisdom manifested in their construction, and the bountiful provision made for them, according to their magnitudes and distances from the source of light and heat.

The first planet from the centre is Mercury, which describes a very eccentric elliptical orbit round the same with great

swiftness in less than three months ; and in consequence of his being always very near the sun, he is rarely seen by us, and when he is visible, it is only for a short space a little after sun-set, and the like before sun-rise.

The surface of this planet, when viewed through the most powerful telescopes, appears equally luminous, not a single spot being discernible thereon. Yet he has similar phases with the moon, being sometimes horned, at others gibbous, and frequently shining with a face almost full ; which changes sufficiently prove that this is an opaque body ; and though he is three times nearer to the sun than we are, it is not to be supposed that a planetary world, having a periodical revolution, is destitute of living and rational beings. It is well observed by a learned writer, " that the

“ inhabitants of Mercury have probably
“ the same opinion of us that we have of
“ Saturn, that we must be intolerably cold,
“ and have little or no light, on account of
“ our great distance from the sun.” He
then proceeds on this subject in the follow-
ing pleasing and scientific manner :

“ The astronomy of those who live in
“ Mercury, and the appearance of the
“ planets to them, opposite at certain times
“ to the sun, may be easily conceived by
“ the Copernican system. At the times of
“ these oppositions Venus and the Earth
“ must necessarily appear very bright and
“ large to them: for if Venus shines so
“ splendidly to us when she is new and
“ horned, she must, when in opposition to
“ the Sun, and at full, be six or seven
“ times larger to the inhabitants of Mer-
“ cury, and affording them so strong a

“ light, that they can have no reason to
“ complain of the want of a moon. What
“ the length of their days is, or whether
“ they have different seasons of the year,
“ cannot be determined, because we have
“ not yet been able to observe whether the
“ axis of this planet has an inclination to
“ the orbit, or what is the time of his
“ diurnal revolution upon his axis. But
“ since Mars, the Earth, Jupiter, and
“ Saturn, certainly have such successions,
“ there can be no doubt that days and
“ nights, and a vicissitude of seasons, are
“ experienced in Mercury, in some degree
“ similar to what are known in the other
“ planets*.”

The most brilliant of all the stars is the planet Venus, which has obtained a very remarkable distinction, in being adopted as

* Huygens' Cosmotheoros, p. 92.

his symbol by the Lord of Life : *I am the root and the offspring of David* (says Jesus), *and the BRIGHT AND MORNING STAR**. And in his promise to the faithful *who shall overcome and keep his works unto the end*, he says, *and I will give him the MORNING STAR*†.

Agreeable to this is the declaration of the Apostle, *We have also a more sure word of prophecy ; whereunto ye do well, that ye take heed as unto a light that shineth in a dark place, until the day dawn, and the DAY STAR arise in your hearts*‡.

Whether this language be merely figurative, or that it points us to a future state of light and glory, resembling the splendour displayed by this brilliant luminary, thus much appears evident, that the manner in

* Rev. xxii. 16.

+ Ch. ii. 28.

‡ 2 Pet. i. 19.

which the planet is mentioned, conveys an idea of a higher state of being, as a reward for those who faithfully discharge their trust in this probationary state.

The more this planet is contemplated, the more striking and appropriate will the comparison appear.

What star is so constant in its attendance upon the sun as Venus; or rather, which of the planetary bodies marks his rising and setting so conspicuously as she does? In the morning she calls upon mortals to awake from their slumbers, and to hail the light of day just before the rising of the solar orb, whence she was called Phospher, or the Morning Star, by the ancients. Again, immediately after his setting she glitters above the horizon, ushering in the season of repose, guiding the footsteps of the way-

faring man by her cheering beams, and raising the mind of the serious observer to the adorable Fountain of universal being: this procured the planet the name of Hesperus, or the Evening Star. Thus Milton, in his beautiful description of the closing day in Paradise:

Now came still evening on, and twilight gray
 Had in her sober livery all things clad ;
 Silence accompanied ; for beast and bird,
 They to their grassy couch, these to their nests,
 Were slunk ; all but the wakeful nightingale ;
 She all night long her amorous descent sung ;
 Silence was pleas'd ; now glow'd the firmament
 With living sapphires ; **HESPERUS**, that led
 The starry host, rode brightest.

MILTON.

This delightful object may be justly considered as an admirable representation of *the day-spring from on high which hath visited us, to give light to them that sit in*

darkness and the shadow of death, and to guide our feet into the way of peace.*

In the morning of life he is our preserver and our redeemer; we are brought into communion with his church, and are enlightened by the cheering influence of his doctrine, which alone maketh men *wise unto salvation*. By pursuing our Christian course with diligence, and by following stedfastly the direction of our Heavenly Counsellor, we shall experience in the evening of our days, a tranquil serenity of mind which will be illuminated by a steady light rendering our declining path smooth and easy into the *valley of the shadow of death*.

It is thus in an immediate sense, that *he who overcometh the world* by a firm

* Luke, i. 78, 79, compared with Isaiah, ix. 2, and lx. 1.

adherence to the words or instructions of his divine master, will be made to enjoy at the season when dissolving Nature stands in most need of consolation and support, the light of the MORNING STAR. His evening is only the prelude to a brighter day; and that which appears to himself and others a season of still silence and awful darkness, is in fact no more than a short passage from death unto life, a quick transition from hope to enjoyment, and a fulfillment of the apostolical language which he has often wished to make his own; *for now we see through a glass darkly, but then face to face; now I know in part, but then shall I know even as I am known**.

In beholding the starry orbs, the mind is naturally carried forwards to a different state of existence, and to other kinds of

* 1 Cor. xiii. 12.

active intelligences, some ideas of which she embodies to her imagination by the analogies that subsist between the different lumenaries. Thus, when engaged in observing the planet Venus, we have the same indubitable marks of its being created for the subsistence of animal beings as our own globe. She exhibits the same phases, and is diversified with similar spots as the moon.

It was long doubted whether this planet be surrounded with an atmosphere or not; but this question has been completely settled by the accurate investigations of a foreign astronomer, who has ascertained the existence of a twilight on Venus*, and from thence has been enabled to determine the

* M. Schroeter, of the Royal Society of Göttingen. His observations on the Moon and Venus, in the Philosophical Transactions of London for 1792, are extremely interesting and entertaining.

density of her atmosphere. This atmosphere appears uniformly of a milky whiteness, and extends to a very great depth, which must necessarily prevent the sun from overpowering the inhabitants with his splendour and magnitude ; a circumstance that most powerfully manifests a providential provision where the artificial day, or the time between sun-rise and sun-set, is at each pole more than one hundred of our natural days.

It is not known that either of these two inferior planets, so called from being within the orbit of the earth, has a satellite ; and though Cassini conjectured that Venus was furnished with one, his opinion has never been confirmed by subsequent observations. Indeed there can be no occasion for such attendants to those bodies, considering their proximity to the sun, and the powerful light which they must afford to each

other. So wisely and graciously hath Providence distributed its blessings, as neither to suffer any part to be without its necessities, nor any to have superfluities, or things without their use and convenience.

From the regions between our orbit and the sun, let us descend again to our own sphere, and land upon our globe, the history and phenomena of which will be found to deserve attentive consideration.

The heaven, even the HEAVENS are the LORD's; but the EARTH hath he given to the children of men.*

If a divine revelation were of no other service than to communicate to mankind the origin of the world they inhabit, and to record for their instruction the history of

* Ps. cxi. 16.

its creation and primitive state, its use must be indispensable, and its value inestimable. Of themselves, they are utterly unable to discover the beginning of things ; and however skilful they may be in their observations upon the celestial bodies, or in analysing, describing, and arranging the animal, vegetable, and mineral tribes, still after all their researches, they could never, by any process of calculation or experiment, determine the age of the Earth, nor the manner of its original construction. Here is the *ne plus ultra* of philosophy and science, that after a minute examination of the several parts, and a discovery of the laws by which they are governed, the most scientific observer must end in hypothesis and conjecture respecting the origin of the whole.

Various theories have, indeed, been fa-

bricated by men of active minds, to account for the formation of the earth, and even to determine its age, by suppositions drawn from the periods in which the different strata would accumulate upon each other.

One theorist imagined the primitive chaos to have been a worn-out comet (*k*) ; another, that the earth was a piece of fiery matter struck off from the sun by the collision of a comet, and so projected to its present distance, where its force being stopped, it commenced its revolutionary orbit, but being too hot for any habitable purpose, it remained a desert above forty thousand years (*l*).

Such are the extravagancies of vehement and unregulated genius, when it attempts to penetrate beyond the boundaries of human reason, and to ascertain by philosophical conjectures, what the strict laws and

experiments of philosophy never could discover.

The Author of Nature alone can give us the history of the Creation; and he only can inform us when and in what manner the earth, with its furniture, arose from nothing. Without revelation it is utterly impossible for the acutest genius, or even an assemblage of the most scientific observers, to form any exact system which shall answer the numerous difficulties that start up in every direction to perplex the inquirer.

What account, for instance, can be given of the numerous traces that appear in every country, of a total alteration in the surface of the earth? What satisfactory reason will the various theorists, who determine every thing without the aid of divine revelation, condescend to offer us for the pre-

sence of marine substances bedded in the bosoms of lofty mountains, of the extraneous fossils, or petrified remains of plants and animals deeply buried in the earth, and in countries where no such species are known to have existed in a natural state?

Here human wisdom is put to a stand, and with all the lights afforded by the discoveries and experiments of modern chemists and mineralogists, it is utterly incapable of accounting for the change which has evidently taken place in our globe. Every hypothesis that has been formed for this purpose is embarrassed with such difficulties as to render it unsatisfactory; and no theory has yet appeared, which will stand the full test of a philosophical examination.

The Bible, however, determines the curious and important problem at once; and in accounting for these vestiges of an ancient

world by the relation of an historical fact, it affords a plain and an irresistible evidence of its own divine origin.

What no philosopher, or naturalist, could possibly solve, is explained to the satisfaction of the learned inquirer, as well as to the edification of the humble believer, in the history of the flood, when *the fountains of the great deep were broken up, and the windows of heaven were opened: and all flesh died that moved upon the face of the earth*^{*}, except those who were in the ark.

At the time when this history was written, it was impossible that any idea could have been formed of adapting it to scientific pursuits, and inquiries which were never thought of till many ages afterwards.

* Gen. vii. 11, 21.

The punishment of the antediluvian sinners, and the preservation of the righteous patriarch and his family for the purpose of peopling the new world, are related in the same plain, simple and concise manner as the preceding history of the Creation and the Fall. Facts only are stated, and they are mentioned historically; when, therefore, we find from actual observation and universal experience, that the earth exhibits every where natural evidences of the truth of those facts which are recorded only in the Pentateuch, have we not an unanswerable proof of the authenticity of these books?

All the wisdom and observations of men have failed, in assigning a legitimate cause for the presence of marine substances in quarries of stone, and the bones of animals peculiar to the eastern climates, being found

at great depths in the cold regions of the north. Now what science cannot explain, the sacred history has fully cleared up, by telling us that the whole structure of the globe was changed on account of the wickedness of them that dwelt thereon.

Nor is the Mosaic history of the origin of the world, taking the word here in a limited sense, less perspicuous and satisfactory. True it is, the sacred writer is concise in his description, because he was not engaged in delivering a philosophical report, but merely in recording a series of the most important facts for the information of the people, whose history formed the principal, though not the exclusive, part of his design.

Much has been written upon the Mosaic account of the Creation ; and infidels have

endeavoured to prove it both inconsistent with itself, and contradictory to the discoveries and observations which have been made by modern philosophers.

Now, as we have already seen and admired the exact harmony which subsists between the revealed word of GOD and his glorious works in the visible heavens, let us here consider the subject of the cosmogony, and inquire whether the account with which the Bible opens, comports or not with the evidence of experience and observation.

The first word in the Scripture is a confutation of the atheistical notion that the universe is eternal, or which is the same thing, that the matter which composes all substances has subsisted from all eternity. On the contrary, the sacred histo-

rian commences with a declaration, that there was a period of time, when even the primary matter which composes the heavens and the earth, began to exist at the command of the Almighty.

What these heavens were, the original word imports, and various other passages of holy writ sufficiently explain. The word is used in contradistinction to the solid globe upon which we move, and consequently it denotes only that celestial fluid which is diffused through the whole system; and which disposes and keeps in order all bodies surrounded by it*.

* The plural **SHAMIM**, translated in our version, *the heavens*, literally denote the *disposers*, or *placers* (in which sense the word is plainly used, Isaiah, v. 20, and Mal. ii. 2). This, says the learned Parkhurst, is a descriptive name of the heavens, or of that immense celestial fluid subsisting in the three conditions of fire, light, and spirit, or gross air,

The infant earth is said to have been without form, and void or empty, being completely covered with darkness, which is an exact representation of what the ancients termed the primitive chaos. In this confused state of the elements, blended in a state of liquefaction, the **SPIRIT OF GOD** is said to have moved upon the face of the deep. Here a difficulty has been raised respecting the meaning of the word rendered *spirit*, some taking it as a declaration that the third person in the Holy Trinity

which fills every part of the universe not possessed by other matter. This name, he adds, was first given by God to the celestial fluid, or air, when it began to act in disposing and arranging the earth and waters, Gen. i. 8, &c. Since that time the **SHAMIM** (*heavens*) have been the great agents in disposing all material things in their places and orders, and thereby producing all those great and wonderful effects which are attributed to them in the Scriptures.—*Parkhurst's Heb. Lex.* p. 373.

was thus engaged in bringing forth the earth from a state of confusion, and settling the whole in a spherical form.

There is, however, no occasion for such an interpretation ; for since the word *as* strictly means wind as spirit, it ought so to be understood in this place. The inspired writer, throughout his concise history, speaks of the Creation as the immediate act of the Divine Will, and every thing as emanating from nothing by the effect of his commanding word. All is related in a simple and natural way ; and therefore when we read of the spirit or *wind* of God moving upon the face of the waters, nothing more is to be imagined by it than that the confused and disordered materials were put into motion by the external agency of the celestial fluid already mentioned, which being separated from what is called

the earth, acted upon and prepared it for the following processes.

Then it was that *God said, let there be light, and there was light*; which passage so forcibly struck one of the greatest critics among the ancients, that he scrupled not, though familiarly acquainted with the most elegant of the Grecian writers, to pronounce it a most elegant specimen of the sublime*.

Upon this part of the Creation, as well as this text, we have made some observations under the section which treats of Light; and therefore, pursuing our course, we enter upon the operations of the second day, when *God said, let there be a firmament in the midst of the waters, and let it divide the waters from the waters.*

* Longinus de Sublimit. cap. vii.

The word firmament does not come up to the exact meaning of the original, which denotes an expansion, and admirably expresses the elastic quality of the atmosphere. This subtle fluid quickens all Nature, animal and vegetable ; and, by separating the waters, or extracting the minuter particles, and collecting them into clouds, distils them again into refreshing showers and dews upon the land. *They drop upon the pastures of the wilderness, and the little hills rejoice on every side. The pastures are clothed with flocks ; the vallies also are covered over with corn ; they shout for joy, they also sing**.

When the Roman philosopher concluded his contemplation upon the various benefits of the air, by saying that it is the con-

* Psalm lxv. 12, 13.

nexion of heaven and earth, one would almost be inclined to think, that his observation is a paraphrastic translation of this part of the Mosaic history*.

Nothing can be more agreeable to the nature and reason of things, than the process of the Creation related in the sacred volume; and yet it deserves notice, that no attempt is therein made to explain any part of it, or to shew in what manner the different operations took place.

Hitherto we have seen the rude chaos called into existence, then reduced into form, by a separation of the light from the dark and ponderous parts; and now the globe is surrounded by that circumambient mass of air which is essentially necessary to all the purposes of life and vegetation.

* Seneca, *Nat. Quæst.* l. ii. c. 4.

When this fluid body was spread out upon the new-formed earth, the sea and the land were divided, and the latter disposed in strata of various kinds ; some for the generation of minerals and metals, others for stones and fossils, but the greater part for the growth and nutriment of vegetables.

In the language of an elegant writer*, the Almighty gave the mass itself that form, which made it an instrument subservient to his designs. He speaks, and behold the hillocks rise, the vallies sink ; and his hand, in order to collect the inferior waters, hollows a deep reservoir, which no circular motion, nor any attraction or settling of elements whatever, could have ordered.

* Le Pluche's Hist. of the Heavens, vol. ii.
p. 242.

The earth, laid open by the retreat of the waters, decks itself with an innumerable multitude of plants, garnished with leaves, flowers, seeds, and fruits. Did the moisture which the waters left behind them, produce this noble work? But though we should to moisture add fermentation, and perfectly well understand the meaning of this notable word; though you should add to fermentation and moisture even the sun, which does not as yet appear; and though you should to all these active causes add the repulsions and attractions, the central forces and gravitations;—all these causes united will never produce a plant. How shall one go about to form a pink or a rose, a grape or a strawberry, together with their forms, smells, and invariable qualities; especially with a germen capable of re-producing the whole, and of perpetuating the species from age to age,

without the loss of any, or the production of new ones?

Philosophy, which formerly fetched all these wonderful works out of a small quantity of mud put in motion, at last does homage to the physics of Moses. If there are upon earth twenty thousand different species of plants, experience at length, in concert with Scripture, teaches us, that these are twenty thousand different works, made after so many different models, and by so many express commands. Why then does modern philosophy still teach us, at times, that we might suppose in the universe nothing more than matter, and a motion spreading through its parts by virtue of impulsion only, and then undertake orderly to deduce from this bare supposition all the effects we admire therein? I honour much those who think so; but I

am afraid they have not sufficiently considered the consequences of such a pretension. I am persuaded they have not by these effects understood the organized species, such as plants. But if their physics abandon them when the germen of a gnat, or of the grass they tread on, is to be made; do they then fancy that they understand better what an earth, an atmosphere, a body of light, or the sun, are, when they thus presume thence to deduce the fabric of the principles of their system?

Philosophy, which at last is returned to the physics of Moses, when the organization of a grain of millet is to be explained, will, I hope, have recourse to the same physics, that is, to the special will of the Creator, when it is to account for the structure of the earth, and for its correspondence with all the parts of the uni-

verse. It is strange that men should hesitate in this point, and rack their brains by long calculations, in order to fetch from some supposition of a motion, or of an attraction, the cause that has put the sun in the centre of the planetary world; that has provided the earth with a large mirror, fit to perpetuate the light of the sun upon it during the night; and has given Saturn a luminous girdle. Here arguments, calculations, and geometry, lead unto illusory causes. But experience and Moses, without any fatigue or dispute, teach us the truth we are searching after. If it is the immediate hand of God, and not a small quantity of matter put in motion, that has produced the fine attire of a tulip, the pinking of the leaves, the green of an anemone, and the invariable nature of a grain of turnip-seed; then, certainly, it is no longer a motion, a pressure, or a collection

of dust, but a most special intention, that has regulated the dimensions of this terrestrial globe; and those physics are infinitely rational which say, according to the common opinion of mankind, that he who has prepared and constructed the flowers, has also formed both the garden which bears them, and the large reservoir which contains the liquid for watering them.

The origin of the vegetable kingdom is indeed an admirable display of the divine wisdom ; and the account given of it in the sacred history agrees exactly with the observations of naturalists.

And God said, let the earth bring forth grass, the herb yielding seed, and the fruit-tree yielding fruit after his kind, whose seed is in itself upon the earth : and it was so. And the earth brought forth

grass, and herb yielding seed after his kind, and the tree yielding fruit whose seed was in itself after his kind: and God saw that it was good*.”

The expression of “yielding seed after their respective kinds,” implies, that the Almighty not only made all the plants in a full and perfect state at first, but that he established the order of Nature, by communicating to them the principle of propagating their species as long as the world should endure. Here also we learn, that the succession of future plants was provided for in the original seeds contained in the parent stock; and this is in unison with the discoveries which modern philosophy has been enabled to make, by the aid of the microscope. It is now ascertained, that

* Gen. i. 11, 12.

all these seeds are the entire bodies of the plants in miniature ; and that every one, however minute it be, has the same vessels, fibres, and fruit, which are afterwards displayed in the vegetable when it arrives to full growth and perfection.

Now no laws of matter and motion can explain the cause of this, or account for the origin of the seeds by which both animal and vegetative life is continued. The Mosaic history was written ages before microscopes were invented, and long before any theories respecting the organization of bodies were thought of ; and yet we find its plain and concise account of the construction of plants, and the order of their succession, established beyond all doubt, by the experiments and observations of the most inquisitive and sagacious inquirers into the recesses of Nature (m).

Another inspired writer has given a similar account of the principle of vegetation, for the purpose of illustrating the important doctrine of the Resurrection. In his admirable discourse on this subject addressed to the Corinthians, St. Paul observes, that the seed thrown into the ground by the husbandman, is only *bare* or *naked grain*; but *God*, says he, *giveth it a body as it hath pleased him, and to every seed his own body**.

This assertion of the Apostle is supported by all that is now known and determined with respect to the physiology of plants; nor is the argument which he maintains, and hereby illustrates, less conformable to the discoveries of modern science. As the vegetable seeds contain

* 1 Cor. xv. 38.

the embryo plants in miniature, so is it in animal nature, where the succession of the species is still preserved and propagated in a similar manner. Death itself, though seemingly an absolute dissolution, and, in the opinion of some, an utter extinction of being, is only a change in the manner of existence, and a removal from one state to another, like the process of vegetation, or to the changes observable in those insects which successively pass from one form to others, each varying from the preceding in every quality and appearance.

The principal objection that has been raised against the Mosaic cosmogony, is on account of the constitution of the celestial bodies, which are said to have been set in the firmament on the fourth day.

This is supposed to be contradictory to

reason and the observations of astronomers, since it is not probable that so stupendous a body as the sun should have been created after the earth, which revolves around it; and it is still more incredible that the fixed stars, many of which are not visible to the naked eye, should have been called first into existence with this comparatively insignificant planet.

This objection, however, is of no force; because there is nothing in the text which necessarily implies, either that the sun itself was then first made, or that the stars began first to shine in the universe on the fourth day of the Creation. This whole process is related with a reference to the earth alone, and therefore, when it is said that the *greater and lesser lights were set in the firmament*, it means no more than this, that they then first dis-

played their brilliancy and influence upon the new planet. Till now, the globe was surrounded by an impervious atmosphere, sufficiently active, indeed, for the various uses to which it was adapted ; but now, every thing being prepared and put in motion, the air became transparent, and the glory of the heavens burst forth in full splendour upon the new world.

There is more of astronomical accuracy in the Mosaic description, expressed as it is in concise terms, and those conformable to the popular apprehension of things, than appears at first sight ; for it is evident, that the sacred historian confines his account of the Creation to the limits of the solar system, by separating the stars from it. He relates, in minute order, the various changes which took place, from the first appearance of the chaos to the revolu-

tion of the earth upon its own axis, and its annual course round the sun ; after which he merely says, that the same Almighty Being was the Creator *of the stars also.* It is not said that they were then made, but that they had the same source, came from the same power, are under the same government, and have exactly the same uses, *to be for signs, and seasons, for days, and years ;* which most unquestionably is the case, not only in our own system, but throughout the innumerable systems scattered over the universal expanse. Yet the language is correct and appropriate, even if it be confined to the uses of the heavenly bodies to our own planet.

The expression *for signs and for seasons*, is a figure common to all languages, and denotes only signs of the seasons, or that the celestial luminaries are serviceable to

us, by pointing out the proper seasons for particular uses, as ploughing, sowing, planting, and reaping.

Again, it is said, that the sun and moon are for days and years; that is, they divide our time into the agreeable and refreshing vicissitudes of day and night, marking a regular succession of periods, by which men are enabled to order their affairs, and to cultivate the present season with a steady view to that which is to follow.

Thus far the scriptural account of the establishment of the heavenly luminaries, in reference to our globe, is perfectly intelligible to the most common capacity, and conformable to the daily experience of all mankind in every age and climate.

Its object seems to have been no more

than to convince men of this great truth, that the benefits they derive from these glorious bodies, constituted a principal part of the design of the All-wise Creator of them. In an age remarkably prone to superstition and idolatry, when the hosts of heaven were supposed to be so many divine intelligencies, and consequently, were made the objects of the highest devotion and adoration, it was proper to guard the chosen people from the common delusion, by demonstrating that the whole universe, the heavens and the earth, had their origin from the will and word of God.

If in this, or any other parts of the sacred volume, the celestial orbs are spoken of in a language not strictly philosophical, it is to be considered that the terms are adapted to popular apprehension, and to

the general appearances of things. The same mode of speech is still used among scientific men, in an age eminent for its progress in astronomical discoveries ; and the vulgar acceptation of the sun's rising and setting, with his regular motion through the zodiacal signs, retains its hold in our conversation and books.

Why, then, shall historical records of the highest antiquity be treated rigorously, for having adopted a form of expression familiar to the capacities and ideas of the persons for whose information and instruction they were designed ? The object of Moses was, to give an account of the origin of the world, and to record the particulars of the dispensations of God to the patriarchs, particularly in the call of Abraham as the father of the faithful ; it was not therefore to be expected, that in such

a work he should choose terms and phrases remote from the customary way of speaking, and above the comprehension of the people whose religious edification constituted the primary intention of his writings.

From a consideration of the origin of the celestial worlds, as forming an incidental part of the history of the Creation, and said to have been rendered conspicuous on the fourth day; let us proceed to a view of animated Nature, where also we shall find numerous proofs of the divine wisdom and goodness.

The earth being now prepared, and surrounded with innumerable lights, may we not demand of those who pretend to be acquainted with the nature of the elements and the laws of motion, what are to be the consequences of this great work, and

what will be the next production of the Almighty Mind ?

But no mortal understanding, nor even the celestial intelligencies themselves, could form an idea, even from the rich and magnificent spectacle before them, of the nature of what was next to rise into existence.

The sons of God who witnessed the formation of the world, and admired its growing beauties, must have been in expectation of what new phenomenon was preparing, when they beheld such a profusion of wonders around them. They are struck with the beauties of the growing vegetation, which make the earth a paradise; but not being able to form a conception of the odour, splendour, freshness, and form of roses, before the divine com-

mand has unfolded the buds of those flowers ; no more does their celestial science enable them to anticipate what is to succeed. All they behold is the evident work of divine wisdom, perfectly free in all its views and designs. They contemplate with admiration what is already made ; and they may, perhaps, comprehend the correspondence of the works of God when they are completed. But in that period of the Creation, none but himself could form any idea what order or variety of things was next to spring up for his glory.

What a surprise to them, and what ground for praise to the Eternal Wisdom, when, after the production of so many excellencies, they beheld a multitude of active beings, having a voluntary motion, and freely roving according to their incli-

nations ; some in the air, others in the waters, and a vast variety dispersed in the plains and upon the hills.

To adopt the language of an elegant and ingenious writer, it would be an employment worthy of the angels, and a philosophy in every respect truly satisfactory, to be able to conceive the intentions and liberalities of the Eternal Wisdom, by a constant study of the particulars of all these animals, in a knowledge of their birth, habitations, polity, anatomy, and various utilities. But instead of praising the Creator for these wonders, the ancient philosophers, with the whole extent of their intelligence, endeavoured to make mankind believe, that the application of a substantial form to a mass of mud and the primitive matter, occasioned a vivifying power, which produced all the variety of

animals. Some of the moderns, too, who ought to have known better, as having a certain source of information, have presumptuously endeavoured to account for the organization of animals, as well as plants, upon mechanical principles. But after all their calculations and reasonings, they are incapable of constructing a single germen, or of managing the nerves.

If, then, we wish to trace things to their true origin, let us learn from that philosopher and historian who, above three thousand years ago, taught that the earth and its elements, the heaven and its ornaments ; the light and the atmosphere, the excavation of the vase of the ocean, and the rising of the habitable lands ; all the tribes of animals, and the numerous species of plants—in short, whatever exists, owes its being and form to one single cause,

to one Eternal Intelligence, who by so many express commands, has assigned to each individual part of Nature its proper place, virtue, and organs.

But for whom are all these preparations? for whom is this magnificent habitation designed? According to the same history we find, that the finishing stroke in this great work of Creation, was the effect of a deliberate council: *And God said, let us make man in our image after our likeness.* All things were wisely created, and the habitation was completely furnished, before the representative of the Divine Intelligence was called into being, to have the dominion *over all the earth.*

Nothing more shall be produced therein throughout all ages. The philosophers, indeed, are in-suspense and divided on this

point ; but let us consult experience. Elements constantly the same ; species which never vary ; seeds and germina prepared to perpetuate every thing ; assemblages, nutritions, and dissolutions, which change in appearance every day, yet so that the same modifications continually recur ; confirming the declaration of the wisest of men, *There is nothing new under the sun.* Now this great truth, which the experience of ages has established, the legislator of the Hebrews decided in these few words : *On the seventh day, God ended his work which he had made ; and rested on the seventh day from all his work.*

From that time the world has revolved. All is in motion on the earth, and within its deepest recesses. All is unfolded, nourished, and continued upon its surface. The supplies of the inanimate masses, and

of the living species, are thereon dispersed, separated, reunited, and mingled, according to constant and simple laws, whereby God has for ever regulated the effects of motion. He has provided for every thing to the remotest period. All proceeds from him as from the immediate cause ; nor will ever motion, or the hand of man, or any other conceivable means, be able, through the long series of years, to add to God's works either the least of worms, or the minutest grain of earth or metal ; because a worm and an elementary particle are natures known to him alone, and because, moreover, he has *entered into his rest*, with regard to the construction of all that is necessary for the duration of this world.

This is a philosophy far more satisfactory to the inquiring mind, than that which would explain every thing by lines.

and numbers, and by the mechanical principles, or the laws of matter and motion. These may indeed be used in the way of conjecture and hypothesis, to account for the general order of the universe ; but the knowledge of motion is not the knowledge of the Creation.

Any system of physics, in which the various means prepared to preserve the world, are regarded as the original causes of the several parts of Nature, is a deviation from truth ; since it refers the origin and formation of every thing to such causes as can produce nothing, and dries up our hearts, by substituting an imaginary mechanism for the intention and will of the Almighty.

Moses, on the contrary, after having acquainted man with his obligations to

God, by informing him that whatever is in the heavens, on the earth, in the sea, and in the air, has its nature, place, and degree of excellence, immediately from the Fountain of Being ;—after having made us sensible, by an enumeration of the works of God in the Creation, that they were prepared for man, the sacred historian then inspires us with humility, by saying that *God took of the dust of the ground, and therewith formed the body of man.* This truth also, like all the preceding ones, is still confirmed by daily experience. When the body of man is dissolved after death, there remains of it nothing more than what constituted its primitive basis—nought and dust ; such is the origin and the term of our terrestrial existence.

Equally pious and excellent is the conclusion of the same writer : “ The palpable

“ difference which I find between the phi-
“ losophy of Moses and the physics of the
“ moderns is, that Moses, in conformity
“ with experience, leads me to the truth
“ which I want, by shewing me, that
“ whatever is upon the earth came out of
“ the hands of GOD, and was put there to
“ serve and exercise man. He renders me
“ grateful, active, and happy; whereas
“ the pretended great naturalists, by attri-
“ buting every thing to matter put in mo-
“ tion, murder the time of their disciples,
“ and torture their brains with an unintel-
“ ligible system, in which nothing is con-
“ nected with the wisdom of the Almighty;
“ nothing inspires the heart with a grate-
“ ful sentiment; but in which every thing
“ is represented as being done without
“ GOD, and without any view to man*.”

* Le Pluche, *ubi supra.*

There is nothing, then, in the history of the Creation, as given by Moses, that can be reasonably objected to, on the ground that the actual state of any part of the universal system contradicts what is said of the origin and formation of the world in the book of Genesis.

Into the construction and natures of things, men may properly and laudably carry their inquiries as minutely as they please; but when they have discovered the elementary principles, and the laws by which they act, they can go no farther without presumption, unless revelation be taken for their guide. Though the Almighty at the beginning organized all things, and established a system for the preservation and continuance of what was originally created; he was not himself bound by those laws, nor restrained to

that peculiar order of things. The mechanical principles by which regularity is maintained throughout the universe, are not, as too many have fatally supposed, so essential to matter, as that different laws could not have been settled by the great Creator. This resting in second causes, has led many into scepticism, and from thence to atheism ; for if matter has certain inherent powers of action and reaction, by which it becomes necessarily organized and active, as we see it in innumerable forms and circumstances, it will be difficult to say that matter is not eternal. The philosophy of Scripture has carefully guarded us against this dangerous conclusion, by expressly declaring, that the very matter of the universe had a beginning at the divine command, which impressed upon it those laws and powers which we are enabled to observe, and also

the secret qualities which have hitherto eluded the researches of philosophy.

The doctrine of the immortal Newton may here be safely adopted, as perfectly agreeable to the Mosaic history of the Creation. According to him, “God Almighty, at the beginning, created just such a quantity of matter as is proportioned to the space in which it was intended to move; that the original particles of this matter are solid, impenetrable, and very durable; that they are of a particular form and size, being endowed also with particular laws of motion, from the various texture and composition of which arise those different kinds of bodies of which this world is constituted*.”

* Optics, page 409.

We see then that true philosophy, after all its inquiries and observations, resolves itself at last in humble acquiescence to the will and power of GOD, as displayed in his works and revealed in his word.

It is a mortification to human wisdom, that every new discovery only serves to prove our ignorance, by opening new mysteries which elude our inquiry; and that though the means of investigation are improved daily by scientific skill and industry, there still remain innumerable secrets which no experiment can analyze, nor any theory explain. Justly may the words of the wise man be here applied: *The thoughts of mortal men are miserable, and our devices are but uncertain. For the corruptible body presseth down the soul, and the earthly tabernacle weigheth down the mind, that museth upon many things. And*

hardly do we guess aright at things that are before us ; but the things that are in heaven, who hath searched out ?*

Similar to this is the reasoning of a very pious and ingenious philosopher of our nation.

“ In respect to the globe,” says he, “ as there are a great many plants and animals, as well as minerals, which we know nothing of, so these things we are employed about belong only to the shell, or the superficial part of the globe ; but what is contained within we know not. Some think the internal part of the globe is elementary earth ; others think it fiery, and the place of hell ; others place in the centre a great magnet ; and the Car-

* Wisd. ix. 14—16.

“ tesians say, that the globe was once a
“ fixed star; and though degenerated into
“ a planet, it hath still the same nature,
“ being only covered over with dark spots,
“ which condensing, formed the earth we
“ live on; all which opinions are as hard
“ to prove false as true: for as it is reck-
“ oned three thousand five hundred miles
“ to the centre of the earth, we have not
“ yet been able to penetrate above a mile
“ or two downwards, either into the earth
“ or sea. And of those vast luminous bo-
“ dies above us we know much less, since
“ we cannot be certain of their magnitude
“ or distance, there being no parallaxes
“ observed in the fixed stars, whereby they
“ can be measured. So that our know-
“ ledge is very short and shallow; for the
“ disproportion of the heavens is so great,
“ that some think the earth to be but a
“ point in respect of the rest; and others,

“ that the great orb itself is but as a point
 “ in comparison of the firmament. Nay,”
 concludes this excellent man, “ we are ig-
 “ norant of so many things relating to the
 “ bodies above and below us, that our
 “ knowledge seems confined to a very small
 “ part of that physical point ; and thiere-
 “ fore, though our knowledge may highly
 “ gratify our minds, it ought not to make
 “ us proud ; nor ought we to value that,
 “ so as to make us despise the knowledge
 “ of spiritual things*.”

Are then the pursuits of science to be neglected, and an inquiry into the recesses of Nature to be discouraged ? By no means : the language of inspiration assures us, that *the works of the Lord are great, sought out of all them that have pleasure*

* Boyle’s Excellence of Theology above Natural Philosophy, section iii.

*therein: his work is honourable and glorious, and his righteousness endureth for ever. He hath made his wonderful works to be remembered**, or to be meditated upon and diligently inquired into.

The commendation bestowed upon Solomon, on account of the vast extent of his knowledge in natural history, as well as in divinity, morals, and the art of government, sufficiently proves, that human learning and scientific researches are among the higher employments of man.

When our Lord sent his disciples for instruction to the lilies and the grass of the field, with a direction to consider them carefully, as displaying the power and wisdom of God in their creation, he was so

* Psalm cxi. 2, 3, 4.

far from discountenancing a spirit of inquiry into the secrets of Nature, that his language is an evident encouragement to that branch of study.

Indeed the Holy Scriptures throughout abound with so many allusions to the wonders of God in the heavens, the earth, and the sea, that we may safely pronounce the close and frequent contemplation of these objects, necessary to an enlarged and exact understanding of the volume of Divine Revelation.

Let us then pursue our course, with a steady adherence to this heavenly guide, but availing ourselves of all the lights and improvements afforded by the observations and discoveries of modern philosophy.

Of the superior planets, or those which

are placed beyond our orbit, the nearest to us is Mars; and yet it is remarkable, that our knowledge of this body is much less than what we possess of those at the remotest distance. Its appearance sufficiently indicates a variety on its surface, similar to what is found on our own globe; and the revolution which it has on its own axis answering nearly to our day, may satisfy us that it is not a solitary desert in the system.

The ancients were acquainted with the two larger bodies beyond Mars, Jupiter and Saturn, although they were ignorant of the peculiar phenomena which appertained to them.

Within the last seven years, however, there have been discovered no less than four new bodies revolving in regular orbits

round the sun, next beyond the planet Mars, and to which have been given the names of Ceres, Pallas, Juno, and Vesta.

Considering the numerous observations which have been made upon the starry heavens since the invention of the telescope, is it not surprising that these planets should have so long escaped the inquisitive scrutiny of astronomers? and does it not equally deserve notice, that they should all be added to the store of our scientific knowledge within so short a space of time?

It may perhaps be treated as a chimerical fancy, to regard these small orbs as being literally new in our system; yet if the Mosaic account of the cosmogony be confined solely to the creation of the earth, and the placing it in the solar system, as

seems now to be universally agreed, then what reason have we to conclude that the work of creation does not perpetually go on? May not the Almighty cause new planetary bodies to be occasionally formed, and the old ones, in their allotted periods, to decay and perish? If so, then is the discovery of every new star a warning voice, announcing the removal of others; though perhaps not immediately, yet certainly at the time appointed in the counsels of the Most High, who *sitteth upon the circle of the earth, and the inhabitants thereof are as grasshoppers before him; that stretcheth out the heavens as a curtain, and spreadeth them out as a tent to dwell in**. The same sublime portion of prophetic Scripture thus directs us to contemplate the wonderful order, splendour,

* Isaiah, xl. 22.

and variety of the celestial orbs : *Lift up your eyes on high, and behold who hath created these things that bringeth out their host by number : he calleth them all by their names ; because he is strong in power, not one faileth to appear.* But what is the conclusion, and what is the great point of instruction to which the view of this grand spectacle leads us ? *Lift up your eyes to the heavens, and look upon the earth beneath ; for the heavens shall vanish away like smoke, and the earth shall wax old like a garment, and they that dwell therem shall die in like manner**.

As the leaves fall off in autumn, so do the generations of men drop into the grave, and so in their several periods shall this earth, and all the planets, fade away, and

* *Isaiah, li. 6.*

vanish like smoke ;—each of them, however, will be succeeded by another series of things, and a new order of beings, to proclaim the majesty of Him whose *salvation is for ever, and whose righteousness shall not be abolished.*

Who can behold the vast structure and admirable furniture of the remoter globes in our system, without a strong conviction of the wisdom and goodness of the Divine Architect, in adapting every part of the system for the convenience and comfort of rational creatures ? Although at an immense distance, and assisted only by instruments comparatively of very modern invention, we are yet enabled to observe the regular periods of four satellites revolving around the planet Jupiter, five about Saturn, and at least two about the Georgian planet.

The eclipses of the satellites of Jupiter are of great importance in ascertaining the longitude of places upon our earth. If, then, the attendants of that planet are of such remote, or, as we may say, casual utility to the inhabitants of a globe so far distant from it, are they of none to the primary body around which they periodically move? We are sensible of the beauty, and feel the advantages and comforts, of our own lunar orb; whence we must naturally conclude, that those planets which are supplied with a greater number of these attendants, all presenting similar phases, experience the same benefits from them as we receive from our moon.

It is observable, that the motion of these secondary planets is so directed, that every satellite by degrees makes its visit

towards each pole of its primary, or the globe around which it revolves. “Here-
“ by,” says a learned and pious writer,
“ these secondaries effect some of the grand
“ works of the Divine Providence from
“ pole to pole, illuminate all parts of their
“ respective globes, contract the length of
“ their nights, move their waters, excite
“ their tides, and perform other such great
“ works of Nature, as with good reason
“ we attribute to the influence of our moon
“ here on our globe.

“ And,” as he well observes, “ can such
“ well-contrived, such useful motions, with-
“ out which the world could not subsist,
“ and the works of Nature be carried on
“ —can these be other than the effect of
“ an infinitely beneficent as well as wise
“ Creator? Could this consonancy be so
“ universal among all the globes that fall

“ within our view ; could their periods and
 “ distances be in the same due proportion
 “ throughout the universe, and their mo-
 “ tions be all so alike, if they had not the
 “ same contriver and maker* ?”

But of all the planets, Saturn is the most remarkable, having a form peculiar to itself. The ring which surrounds the body is detached from it ; and though very broad, and casting the solar light strongly upon the planet, it is comparatively thin, because the edge reflects hardly any light. On this singular subject, its admirable contrivance and utility, the learned author just mentioned makes the following observations :

“ Its smoothness and aptitude to reflect

* Derham's Astro-Theology, b. iv. c. 5.

“ light and heat, is a wonderful convenience. Was it full of mountains, and
“ vallies, and of waters too, as in our
“ earth, the reflection would be too weak
“ to render the ring visible to us, at so
“ great a distance as we are; but perceiv-
“ ing its light to be so lively and strong,
“ as to render both itself and Saturn very
“ illustrious, it is a demonstration of the
“ aptitude of its structure and smoothness
“ for the reflection of light and heat to
“ the planet it serves.

“ As the periodical revolutions of the
“ earth are an excellent and providential
“ contrivance, for those useful and neces-
“ sary mutations we have of the seasons of
“ the year, so no doubt but the same be-
“ nefits accrue by these revolutions which
“ Saturn hath about the sun. It is visible
“ that, as Saturn changes its place in its

" orbit, so its ring receives a variety of
 " aspects, not only with respect to us, but
 " to the sun. Thus in one part of the
 " orbit it appears with a large ellipsis, so
 " as to exhibit a great space between it
 " and Saturn: in another part with a lesser
 " ellipsis, and sometimes has only a slen-
 " der straight line, and sometimes it is not
 " visible at all; also, sometimes one side
 " of the ring is enlightened, and reflects
 " light towards one part of Saturn, some-
 " times the other enlightens another part:
 " and there is no doubt, but that as our
 " earth has its seasons according to its po-
 " sition to the sun, and its periodical mo-
 " tion in its orbit; so Saturn, throughout
 " his period, hath his seasons according
 " to his position to the sun, and the va-
 " rious reflections of the ring upon the se-
 " veral parts of his globe*."

* Derham, b. vii. c. 7.

This ring casts a prodigious shadow upon the body of the planet, and thereby occasions a great diversity of light and darkness thereon. To the inhabitants of Saturn it must appear as an extensive bow in the heavens, bright as our moon at the extremities, and darkened in the middle by the shadow of the planet's body. It has been observed, by some spots on the ring, that it has a revolutionary motion upon itself in the manner of a satellite, the uses of which no doubt it answers in a variety of respects: but considering that Saturn is attended by five large and regular moons, one of which is uncommonly brilliant, it is reasonable to suppose that this remarkable appendage is calculated for more extensive benefit, than to reflect light upon the primary globe which it surrounds.

From the immense distance and appa-

rent smallness of the Georgian planet, discovered by Dr. Herschel, we are unable to perceive any peculiarities belonging to it; but as it is accompanied by two satellites at least, the nature of the planet must be similar to those which are nearer to the common centre (*n*). Yet when we contemplate the glories of the great source of light and heat, and consider the comforts we enjoy from his presence and influence, we may perhaps look upon the remote regions and boundaries of our system with a degree of wonder and concern. But when we reflect upon the varieties of climate in our own globe, and take a view of the inhabitants of Greenland and Kamtschatka, we shall see no reason to conclude that the superior planets, or their attendants, are destitute of intelligent beings, adapted to their situation.

The people of Borneo or Madagascar, may as well pity the condition of those Europeans who live half the year among snow and ice, and for the space of near two months never see the sun at all, as the inhabitants of this earth feel astonishment at the circumstances of those who reside in Jupiter, Saturn, and the Georgian planet.

The Laplander, so far from feeling uneasiness in his residence, may probably wonder how men can endure the burning heat of a vertical sun ; and in like manner, if the inhabitants of Jupiter have a sight of this earth, they may entertain just such an opinion of our intolerable heat, as we imagine to be endured by those who dwell in Venus and Mercury.

It has been well observed, that since

we find the earth to agree with the rest of the planets in every thing concerning which we have any means of inquiry, it is but reasonable to suppose, that it does the same in those things of which it is impossible for us, by any other certain way, to have an assurance. If we observe a particular engine in one country, and afterward in a distant land see another, agreeing with the former in all things as far as we are able to discover; though we are not informed of its design and use, we yet very naturally believe that it serves to the same purpose, and was intended for the same end, as the one of which we had a previous knowledge. Thus by the same way of reasoning we may fairly conclude, to what uses all the planets serve, and on what general designs Providence makes use of them, namely, to be the habitations of animals, and the seats of such plants as

are necessary or convenient for their support and sustenance. This being certainly known of the earth, and thence probably inferred with respect to the rest of the planets, it appears evident, that a circular orbit is the most fit and proper for these purposes, and consequently this was the original situation of the planets, and the primary work of Providence in ordering their courses. Such creatures, rational, sensitive, or vegetative, as are adapted to a certain degree of the solar heat, are incommoded by one that is greater or less; and therefore they are peculiarly accommodated by a circular orbit to their nature and condition, which could not be the case if it was eccentric*

This being the case, we have no reason

* Whiston's Theory of the Earth, 3d ed. p. 126.

to suppose that Mercury is too fiery a globe for the residence and comfort of creatures adapted to their situation ; nor that Saturn and the Georgian planet, with their secondaries, are desolate regions, locked up in eternal ice and snow, serving for no other purpose than to excite the curiosity and observation of man.

But it may be asked, to what ends answer those remarkable bodies which revolve in stated periods about the sun, but in such eccentric ellipses, that at one time they are nearer to the solar orb than even Mercury, and at another time beyond the known limits of our system ?

Here, indeed, conjecture is at a stand, and inquiry is confined to a very narrow compass. All that has been ascertained of the nature and order of comets is, that

they are opaque bodies enlightened by the sun, and distinguished by an immense stream of light issuing from their heads, supposed by Newton to be a thin vapour, occasioned by the heat of that part of the comet, in the same manner as smoke arises from the earth. Another hypothesis on this subject is, that part of the matter which forms the tails of comets issues from their own atmosphere, rarefied by heat, and driven forward by the force of the light streaming from the sun; and that a comet passing through the sun's atmosphere, is drenched therein, and carries away some of that substance with it. This last opinion, which is that of Lalande, is built upon the conjecture of Newton, and serves to support his other notion, that the comets serve to recruit the expence of the atmospheres of the planets, as well as of that of the sun itself.

It is well known that not only the ancients, but many moderns, have looked upon these celestial bodies as ominous of great public calamities and revolutions; and our sublime poet has drawn from hence one of the loftiest and most terrific figures in his immortal work.

On th' other side,
 Incens'd with indignation, Satan stood,
 Unterrified, and like a comet burn'd,
 That fires the length of Ophiuchus huge
 I' th' arctic sky, and from his horrid air,
 Shakes pestilence and war.

MILTON, PAR. L. ii. 708.

The superstitious notion, however, that comets have any influence upon the affairs of men, is now disregarded, except by the vulgar; neither can they be considered as special messengers of the divine judgments, since the accurate observations of Newton

and Halley ; the former illustrious philosopher having geometrically constructed the orbit of the great comet which appeared in 1680, and proved that it described equal areas in equal times. From this theory, Dr. Halley undertook the immense labour of calculating the places of comets ; and on comparing his computations thence deduced, he found them to agree with the observations of the comets in 1531, 1607, and 1682. This induced him to conclude, that these could be no other than one and the same ; and therefore he confidently predicted its return in 1758 or 1759, which accordingly happened.

Thus has been determined the sagacious conjecture, or philosophical prediction, of Seneca on this subject : “ The time will ‘ come,’ says he, “ when the nature of

“ comets and their magnitudes will be demonstrated, and the routes they take, so different from those of the planets, shall be explained. Posterity will then wonder that the preceding ages should have been ignorant of matters so plain and easy to be known.”

It was the opinion of Whiston, that the universal deluge was occasioned by the passing of the earth through the atmosphere of a comet; and the same ingenious but eccentric writer makes comets to be places of punishment for the wicked, and the instrumental cause of the final destruction of the world. In all this, however, there is nothing more than conjecture; but from the analogy observable between the periodical times of the planets and those of the comets, no doubt can be entertained that they are necessary parts of

the same system, having their relative and particular degrees of utility, wisely adapted by the Creator for the general good, and serving to shew forth his glory.

At his command, affrighting human kind,
Comets drag on their blazing lengths behind :
Nor, as we think, do they at random rove,
But in determin'd times, thro' long ellipses move :
And tho' sometimes they near approach the sun,
Sometimes behind our system's orbit run ;
Throughout their race they act their Maker's will,
His power declare, his purposes fulfil.

BAKER.

FIXED STARS.

—On Nature's Alps I stand,
And see a thousand firmaments beneath ;
A thousand systems as a thousand grains !
Each of these STARS is a religious house.

YOUNG.

THE spheres or orbits of the planetary globes, immense as their circuit must be, are embosomed in that beautiful and magnificent expanse the firmament, which canopies the whole of visible space, and is also the seat of the fixed stars. It is not a solid body, as its appearance seems to indicate, but a fluid of a deep blue colour,

exquisitely pure. On this dark ground or plane, all those shining worlds which roll incessantly over our heads in variegated lustre and combinations, are projected.

The question here is, not what the learned in the different ages of literature or successive improvements of science have conceived of the firmament, but what the appearance of it actually is to those who have not the advantage of either letters or philosophy. We see it every where bounding our view, stretched out as a curtain, as one vast ornamented dome, or as the concave of a mighty elevated sphere divided into two equal parts. This seems to us perfectly uniform; and in a clear night, when the moon leaves our horizon, it presents a sight so magnificent, that no rational being can contemplate it without deep and solemn attention.

With a spectacle of such ample and important research perpetually before the eyes of mankind, their faculties of inquiry could not lie dormant. The stars were in consequence classed into certain degrees of magnitude, and arranged in portions, or divided into various sections, properly termed constellations.

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This was the more necessary, on account of their apparent numbers, and promiscuous distribution through every quarter of the heavens. Perhaps not more than a thousand or fifteen hundred are actually visible to the naked eye; but even these seem for the most part to set calculation at defiance, from their variety in magnitude and situation, their extreme altitude, and different degrees of lustre.

No mode of measurement has yet been

devised for ascertaining the exact distance of these elevated bodies from us. That it is prodigious, however, cannot be doubted, since the largest in the whole firmament seems not at all increased by our coming nearer to it, by one hundred and ninety-five millions of miles in one point of the earth's orbit, or in the least diminished by receding from it in the opposite point to an equal distance. Well may imagination run wild, where the scope is so unbounded! The whole expanse of space, to an immeasurable extent in the interior of the heavens, is probably full of these magnificent worlds; and some of them are even supposed to be at such a distance from our earth, that their light, which travels at the rate of ten millions of miles in a minute, has not reached us since the creation.

... Neither have our most powerful instru-

ments any sensible effect on the figure or bulk of those remote orbs. They may increase the numbers of them, but cannot augment their apparent magnitudes. The circuit of our earth, or even the space occupied by the whole planetary system, beheld from a fixed star, would appear no more than a point, or, indeed, no part of it would be perceptible, except our sun, and even this would seem only a small, twinkling, lucid point. All of them must therefore shine by their own native lustre: for the rays of the sun, transmitted to such a distance, could not be visible; and light from bodies perfectly opaque, thus remotely situated, could never reach our globe.

Sir Isaac Newton proposes it as a query, “whether the sun and fixed stars are not “great earths made vehemently hot, whose

“ parts are kept from fuming away by the
“ vast weight and density of their super-
“ incumbent atmospheres, and whose heat
“ is preserved by the prodigious action
“ and re-action of their parts upon one
“ another?”

Dr. Herschel makes the following interesting observations on this sublime subject: “ That stars are suns can hardly admit of a doubt. Their immense distance “ would perfectly exclude them from our “ view, if the light they send us were not “ of the solar kind. Besides, the analogy “ may be traced much farther. The sun “ turns upon its axis; so do many stars, “ most probably all. From what other “ cause can we so probably account for “ their periodical changes? Again, our “ sun has spots on its surface; so have the “ stars already alluded to, and probably

“ every star in the heavens. On our sun
“ these spots are changeable; so they are
“ on several stars. But if stars are suns,
“ and suns are inhabitable, we see at once
“ what an extensive field for animation
“ opens itself to our view.

“ It is true that analogy may induce us.
“ to conclude, that since stars appear to be
“ suns, and suns, according to the common
“ opinion, are bodies that serve to enlighten,
“ warm, and sustain a system of planets;
“ we may have an idea of numberless
“ globes, that serve for the habitation of
“ living creatures. But if these suns
“ themselves are primary planets, we may
“ see some thousands of them with our
“ own eyes, and millions by the help of
“ telescopes; when at the same time, the
“ same analogical reasonings still remain

“ in full force with regard to the planets
“ which these suns may support.

“ Among the great number of very com-
“ pressed clusters of stars I have given
“ in my catalogues, there are some which
“ open a different view of the heavens to
“ us. The stars in them are so very close
“ together, that notwithstanding the great
“ distance at which we may suppose the
“ cluster itself to be, it will hardly be pos-
“ sible to assign any sufficient mutual dis-
“ tance to the stars composing the cluster,
“ to leave room for crowding in those pla-
“ nets for whose support these stars have
“ been, or might be, supposed to exist.
“ It should seem therefore highly pro-
“ bable, that they exist for themselves ;
“ and are in fact only very capital, *lucid*,
“ primary planets, connected together in
“ one great system of mutual support.”

However numerous and magnificent the luminaries of heaven appear to the unassisted eye, their number rises above all possible calculation by the application of optical instruments. By these helps, stars of every magnitude and description burst on our view in countless myriads! The more perfect and powerful these instruments, the more prodigious and endless is the quantity of celestial objects that present themselves. Imagination is overwhelmed by an expanse without boundaries, and spangled with luminaries which exceed all computation. Telescopic stars, as they are called, in some constellations particularly are multiplied to an indefinite extent; but the average of former astronomers is infinitely exceeded by the discoveries of modern times. Many stars which in ordinary glasses appear single, when beheld through the magnifying tube are found to consist

of two or more. The galaxy, or milky way, owes all its richness and lustre to an immense assemblage of stars, which, however far apart in reality, or whatever are their respective magnitudes, are much too remote, with all our optical apparatus, to be specifically discerned. Variety of *nebulæ*, or small whitish specks, are also observable by competent telescopes, in a serene night, spread over a great part of the firmament. A small part of the phenomena lately discovered was formerly known, which shews the advantage of the superior instruments now in use, and leaves us in hopes that, by the successive labours of learned men, still more extensive discoveries will be made in this wonderful science. Dr. Herschel, to whose profound investigation we owe so much of our present knowledge of the universe, specifies a peculiar class of nebulæ, which he calls plane-

tary, on account of their brightness, and shining with a well-defined disk.

“ A very remarkable circumstance,” says he, “ attending the nebulæ and clusters of “ stars is, that they are arranged into “ strata, which seem to run on to a great “ length ; and some of them I have already “ been able to pursue, so as to guess pretty “ well at their form and directions. It is “ probable enough, that they may sur- “ round the whole apparent sphere of the “ heavens, not unlike the milky way, which “ undoubtedly is nothing but a stratum of “ fixed stars. And as this latter immense “ starry bed is not of equal breadth or “ lustre in every part, nor runs on in one “ straight direction, but is curved, and “ even divided into two streams along a “ very considerable portion of it; we may “ likewise expect the greatest variety in

" the strata of the clusters of stars and
 " nebulæ. One of these nebulous beds is
 " so rich, that, in passing through a sec-
 " tion of it, in the time of only thirty-six
 " minutes, I detected no less than thirty-
 " one nebulæ, variously arranged; large
 " ones with small seeming attendants: nar-
 " row but much extended lucid nebulæ,
 " or bright dashes: some of the shape of a
 " fan, resembling an electric brush issuing
 " from a lucid point; others of the cometick
 " shape, with a seeming nucleus in the
 " centre; or like cloudy stars, surrounded
 " with a nebulous atmosphere: a different
 " sort again contain a nebulosity of the
 " milky kind, like that wonderful inexpli-
 " cable phenomenon about Orionis, while
 " others shine with a fainter mottled kind
 " of light, which denotes their being re-
 " solvable into stars*."

My improvement or application of these sublime conceptions is thus happily anticipated by an author of distinguished taste and science: "What a magnificent idea of the Creator and his works is here presented to the imagination! The sun, a stupendous body of fire, is placed in the centre of the system, and round its orb the planets, satellites, and comets, perform their revolutions with an order and regularity which must fill our minds with the most exalted conceptions of their Divine Original. Who can contemplate the magnitudes and distances of these immense bodies, and the beautiful harmony of their motions, and not be struck with the grandeur of the scene, and the power of Omnipotence! But what must be our astonishment when we are told, that this glorious system, with all its superb furniture, is only a small part

“ of the universe ; and if it could be wholly
“ annihilated, would be no more missed,
“ by an eye which could take in the whole
“ Creation, than a grain of sand from the
“ sea shore !

“ It is in these higher regions, that the
“ Deity has displayed himself in such in-
“ delible characters as must rouse the
“ most insensible spectator, and fill his
“ mind with admiration and astonishment !
“ By contemplating the magnitudes and
“ distances of the fixed stars, all partial
“ considerations of high and low, great
“ and small, vanish from the mind ; and
“ we are presented with such an unbounded
“ view of Nature, and the immensity of
“ the works of Creation, as overpowers
“ all our faculties, and makes us ready to
“ exclaim with the Psalmist, *Lord, what
“ is man, that thou art mindful of him, or*

*“the son of man that thou regardest
“him*?”*

Discoveries made in these starry regions, and the changes incidental to particular stars, perfectly coincide with the fundamental doctrine of revelation concerning the destination of our world. There we are taught to believe and calculate on the final decomposition of the earth and planetary system, or perhaps of the whole universe! Who knows but in the consolidation of ours with other adjacent systems into one more general and universal, our earth may perish by its vicinity or collision with masses of superior magnitude and gravity; or, like other bodies and systems, the solar one may now be actually changing its situation in absolute space, and the

* Bonnycastle's Introduction to Astronomy.

awful process may be far advanced which shall end in *new heavens and a new earth!*

Let us here attend to the analogical reasoning of a very eminent astronomer, founded upon the most intent and accurate investigation of the heavens.

“ By observations, such as this paper
“ has been calculated to promote and faci-
“ litate, we are enabled to resolve a pro-
“ blem not only of great consequence, but
“ in which we are all immediately concerned.
“ Who, for instance, would not wish to
“ know what degree of permanency we
“ ought to ascribe to the lustre of our sun?
“ Not only the stability of our climates,
“ but the very existence of the whole ani-
“ mal and vegetable creation itself, is in-
“ volved in the question. Where can we
“ hope to receive information upon this

“ subject but from astronomical observa-
“ tions? If it be allowed to admit the
“ similarity of stars with our sun as a point
“ established, how necessary will it be to
“ take notice of our neighbouring *suns*, in
“ order to guess at that of our own! That
“ *star* which among the multitude we have
“ dignified by the name of *sun*, to-morrow
“ may slowly begin to undergo a gradual
“ decay of brightness, like Leonis, Ceti,
“ Draconis, Ursa Majoris, and many
“ other diminishing stars that will be men-
“ tioned in my catalogues. It may sud-
“ denly increase, like the wonderful star
“ in the back of Cassiopeia’s-chair, and the
“ no less remarkable one in the foot of
“ Serpentarius, or gradually come on like
“ Geminorum, Ceti, Sagittarii, and many
“ other increasing stars, for which I also
“ refer to my catalogues. And lastly, it
“ may turn into a periodical one of twenty-

“ five days duration, as Algol is one of
“ three days, Cephei of five, Lyra of six,
“ Antinoi of seven; and as many others are
“ of various periods.

“ Now, if by a proper attention to this
“ subject, and by frequently comparing
“ the real state of the heavens with such
“ catalogues of brightness as mine, it should
“ be found that all, or many of the stars
“ which we now have reason to suspect to
“ be changeable, are indeed subject to an
“ alteration in their lustre, it will much
“ lessen the confidence we have hitherto
“ placed upon the permanency of the
“ equal emission of light of our sun. Many
“ phenomena in natural history seem to
“ point out some past changes in our cli-
“ mates. Perhaps the easiest way of ac-
“ counting for them, may be to surmise
“ that our sun has been formerly some-

“ times more, and sometimes less bright,
“ than it is at present. At all events, it
“ will be highly presumptuous to lay any
“ great stress upon the stability of the pre-
“ sent order of things ; and many hitherto
“ unaccountable varieties that happen in
“ our seasons, such as a general severity
“ or mildness of uncommon winters or
“ burning summers, may possibly meet
“ with an easy solution in the real inequa-
“ lity of the sun’s rays*.”

All that can be discerned in this mighty fabric, shews that there is nothing permanent in its parts ; and the most accurate and extensive observations of the entire system confirm the declarations of holy writ, that *the things which are seen are*

* Philosophical Transactions for 1796, Part I.
p. 185.

temporal; that the host of heaven shall be dissolved and fall away in succession as decayed leaves from the vine, and the ripe fruit from the fig-tree†.”*

Thus the greatest and sublimest works of GOD, correspond so exactly and uniformly with his word, that the better these are known, this will obtain the stronger belief; and the deeper we penetrate into the arcana of Nature, the more shall we be qualified for appreciating the evidence and excellence of revelation.

How astonishing the goodness and grace of GOD, that in the immensity of the Heavens, we who inhabit the lowest and least of his works, and are to the natives of the worlds around us but as insects on a

* Cor. iv. 18.

† Is. xxxiv. 4.

mole-hill, should experience so many proofs of that benign dispensation by which we are rescued from eternal destruction ! The whole economy of the firmament is an illustrious document that his *mercy is above the heavens*. In proportion as we unroll and contemplate the majestic mysteries of Creation, and develope the wonders with which it abounds, we see that the Maker and Father of all, hath no where left himself or the revelation of his will for our salvation, without a witness. *These are thy doings, O Lord, and they are marvellous in our eyes !*

THE UNIVERSE.

the high-born soul
 Disdains to rest her heav'n-aspiring wing
 Beneath its native quarry. Tir'd of earth,
 And this diurnal scene, she springs aloft
 Thro' fields of air ; pursues the flying storm,
 Rides on the volley'd lightning thro' the heavens :
 Or yok'd with whirlwinds and the northern blast,
 Sweeps the long tract of day. Then high she soars
 The blue profound ; and hov'ring round the sun,
 Beholds him pouring his redundant stream
 Of light ; beholds his unrelenting sway
 Bend the reluctant planets to absolve
 The fated rounds of time. Thence far effus'd,
 She darts her swiftness up the long career
 Of devious comets ; thro' its burning signs
 Exulting measures the perennial wheel
 Of Nature, and looks back on all the stars,
 Whose blended light, as with a milky zone,
 Invests the orient.

AKENSIDE.

THE stupendous and variegated fabric
 of the universe is equally august and in-

comprehensible. The complicated scenery, on a general view, dazzles rather than enlightens, and from the limited structure of our faculties, the whole seems more calculated to perplex the mind, than to elevate its powers, or regulate its inquiries. Even those objects with which we are most familiar, by their vicinity and aptitude to our senses, and the perfect exercise of these on whatever comes within their cognizance, are comparatively but little known; and our senses, though the primary sources of all intelligence, it were not difficult to shew, by a brief analysis of their respective operations, are like every other part of our frame, extremely impotent and contracted. Much ignorance originates in a partial comprehension of things with which we are daily conversant. And how, therefore, without higher means of information and superior powers, can we be supposed to judge

correctly of those things to which none of our senses can have competent access? Can our weak and benighted understandings, incapable as they are of explaining the mysteries contained in a drop of water, a grain of dust, or a blade of grass, marshal the stars of light, analyze the orbs of Heaven, or adjust the innumerable systems which crowd the regions of space? Their numbers and distances, their magnitudes and radiance, the celerity of their movements, together with their regularity, serenity, and uniform appearance, strike our minds with astonishment and admiration, but still leave them in a state of uncertainty and suspense.

“ The objects which we commonly call “ great,” says an ingenious writer, “ va-“ nish, when we contemplate the vast body “ of the earth ; the terraqueous globe it-

“ self is soon lost in the solar system. In
“ some parts it is seen as a distant star ;
“ in others it is unknown, or visible only at
“ rare times to vigilant observers. The
“ sun itself dwindle^s into a star ; Saturn’s
“ vast orbit, and the orbits of all the co-
“ mets, crowd into a point, when viewed
“ from numberless spaces between the
“ earth and the nearest of the fixed stars.
“ Other suns kindle light to illuminate
“ other systems, where our sun’s rays are
“ unperceived ; but they also are swallowed
“ up in the vast expanse. Even all the
“ systems of the stars that sparkle in the
“ clearest sky, must possess a corner only
“ of that space, through which such sys-
“ tems are dispersed ; since more stars are
“ discovered in one constellation, by the
“ telescope, than the naked eye perceives
“ in the whole heavens. After we have
“ risen so high, and left all definite mea-

“sures far behind us, we find ourselves no
 “nearer to a term or limit; for all this is
 “nothing to what may be displayed in the
 “infinite expanse, beyond the remotest
 “stars that have hitherto been disco-
 “vered*.”

Notwithstanding the humiliating sensations which this view of the boundless expanse naturally and properly tends to excite in the mind of every thinking man, still the frame of the universe furnishes abundant matter for his contemplation, as a whole as well as in its separate parts.

This magnificent fabric is allotted out in detached portions to created beings; but it is in the unity of the stupendous whole that

* Maclaurin's View of Sir Isaac Newton's Discoveries, p. 16.

sovereign perfection pre-eminently shines. The imagination, indeed, may be justly astonished at its own temerity ; but, in reality, the cause is universally proportioned to the effect, and there is nothing either great or small in immensity.

In the regions of space, all the fixed stars have their orbits assigned them, each leading in its train a retinue of planets and comets, in the same manner as we and our moon revolve round the sun, and as Jupiter and Saturn conduct their respective satellites.

All these systems of worlds resemble, though probably on a larger scale, that to which we belong, since in each, the bodies of which it is composed revolve round a common centre, as the planets and comets do round the sun. It is even pro-

bable that several individual systems concur in forming others more general and extended throughout the regions of immensity. Those, for instance, that are comprehended in the milky-way, perhaps make component parts of a more enlarged system; and this again may belong to other ways, with which it constitutes an entire fabric, or a vast machine in constant motion, and acting by immutable laws.

Here then we may conceive the milky-way made up of various systems, each of which has its centre of revolution; and the whole taken together, still making but a small part of a greater system in which it is included, with an infinity of others of a similar description.

Thus every thing revolves—the earth round the sun; the sun round the centre

of his system ; that round a centre in common to it with other systems ; this group or assemblage about a common centre, with a prodigious number of the same kind ; and where is the boundary of the whole ?

As the fixed stars gravitate towards one another with their respective trains of planets, we should have the more reason to dread the introduction of anarchy, if they had no central body to regulate them. We cannot suppose that in the solar system so many bodies, the sum of whose masses greatly exceeds that of the sun, should exactly revolve in their orbits, if he were withdrawn. With how much more reason then ought we not to invest those vast systems of fixed stars with a central body, powerful enough to regulate all their motions ?

But what shall we say of an assemblage

of systems of milky-ways, considered as a whole? What disorder must not arise, were we to deprive them of particular as well as common centres? How should we imagine that millions of millions of planets and comets, of suns and systems, could peaceably pursue their courses, amidst an infinity of orbits crossing each other, if all the centres were in empty space, if the directions of their respective gravities were continually varying, and if there existed no common and preponderating gravitation, in condition to regulate the immense machine, and to keep it in perpetual order and motion?

Every consideration then leads us to lodge in the centres, bodies of a force equal to the preservation of good order in their respective realms, and to carry all these round a common body on which

each of them depends, according to its station.

But who is capable of measuring the space and time which all these globes and worlds employ in revolving round that immense body, the throne of Nature, and the footstool of the Divinity? What painter or poet, what human imagination, can figure the beauty and magnificence of this source of all that is beautiful, great, and magnificent, from whence order and harmony flow in eternal streams through the whole bounds of the universe? And even what we call by this extensive term, all the suns and planets, satellites, and comets, which together form this mighty fabric, may be no more than a portion of the works of GOD; bearing such a relation to a superior order of things as our orbit does to the solar system, and as this system again bears to the universe.

This conjecture at least appears to receive some countenance from the observations which have been made on those appearances in the Heavens called nebulous stars, but which in reality are not lucid bodies, which emit or reflect light like the sun and moon ; neither are they the combined light of clusters of stars like the milky-way. “ But I take them,” says an accurate and pious observer, “ to be vast “ areæ or regions of light infallibly beyond “ the fixed stars, and devoid of them. I “ say regions, meaning spaces of a vast “ extent, large enough to appear of such a “ size as they do to us, at so great a dis- “ tance as they are from us.”

“ I leave it,” says he, “ to the superior “ sagacity and penetration of others, to “ judge whether these nebulosæ are parti- “ cular spaces of light ; or rather, whether “ they may not, in all probability, be

“ chasms or openings into an immense region of light beyond the fixed stars ; because I find, in this opinion, most of the learned in all ages (both philosophers and divines too) thus far concurred, that there was a region beyond the stars. Those that imagined there were crystalline or solid orbs, thought a *caelum empyræum* was beyond them, and the *primum mobile* ; and they that maintained there were no such orbs, but that the heavenly bodies floated in the ether, imagined that the starry region was not the bounds of the universe, but that there was a region beyond that, which they called the third region and third heaven*.”

* Dr. Derham's Observations on the Appearances among the Fixed Stars, called Nebulous Stars, in Martyn's Abridgment of the Philosophical Transactions, vol. viii. p. 132.

What a sublime field for contemplation here expands itself before the human mind! for if the fixed stars are at immeasurable distances from us, and if there are still perceptible regions of light at an inconceivable distance beyond them, what boundaries can we prescribe in our imagination to the immensity of Creation?

Great and glorious as the system is to which we belong, and upon which we are able to make certain observations, how minute does the whole appear when we consider it as encompassed by a sphere of prodigious magnitude and brilliancy, a glimmering view of which is afforded us through these lucid areæ, or as it were, by means of so many chinks or openings into the superior world?

This contemplation of the universe re-

gions, innumerable globes of superior magnitude and resplendence are perceived, ranged in order, and accumulated in groups, or clustered like grapes on a vine, shining in countless variety, each more glorious than our sun, pouring full day through the æthereal plain, and in one dazzling constellation above another, crowding the boundaries of space. Who knows but these constellations of radiant orbs, blazing on all sides with the brightness of so many suns in meridian majesty, may illuminate the grand empyreal route which leads to the palace of the Great King ; or that all this transcendent splendour may be no more than the exterior lustre of his residence, who dwells in light inaccessible and full of glory.

With such magnificent constellations of flaming worlds are the precincts of the ce-

lestial mansions studded and adorned. And these wonderful prospects, imperfect and confused as seen by our limited and obscure organs, abundantly demonstrate the richness, even of exterior creation, and indicate the beauteous gradation and variety in the splendours which distinguish the heaven of heavens.

From these data, furnished by Nature, and corroborated by Revelation, we may conclude, that the Saints in glory will be charmed by the beauty, as well as satisfied with the happiness, of heaven; and that this adaptation to the constitutional preference of our common nature, is an essential ingredient in that perfection to which we aspire. There, we hope to be as perfect in sense as in intellect, in our bodily organs as in our spiritual faculties. There shall be nothing to offend the sight,

or cloud from the view the increasing glories of the upper sanctuary, in all this holy mountain. How elegant, though figurative and spiritual, is the sketch which an inspired writer gives us of this glorious region! *And the city had no need of the sun, neither of the moon, to shine in it; for the glory of God did lighten it, and the Lamb is the light thereof.*

This contemplation of the heavenly inheritance laid up for those who have faithfully maintained their religious course in this state of trial, powerfully tends to wean our affections from the allurements of sense, and to raise our desires above the perishing vanities of the world. But to those who are truly “strangers and pilgrims on earth,” the objects of contempt and persecution to the votaries of wealth, pleasure, and ambition, it presents a still more delightful

scene; and they hear from the seats of bliss, the cheering language of exhortation and comfort, saying to them, “Ye who “are treated as the outcasts of society, “borne down by the cares and embarrass-“ments of a brief precarious existence, “lift up your heads and look up, for the “day of your redemption draweth nigh. “All the incumbrances and embarrass-“ments which now afflict and depress you, “shall be finally shaken off, with your “present habiliments of frailty and mor-“tality. Your ultimate destination is here, “where none usurp the interests of others, “where the distribution of happiness is “equal, and where there is both room and “bread enough, and to spare. An ever-“lasting, unlimited, and well-furnished “habitation is reserved for you in this “great kingdom! Envy not, therefore, “the men of the world who make no ac-

“ count of futurity, a little temporary accommodation, though it be more indulgent and splendid than your own ; it is but a prelude to a dirge, the solemnity of which is deep as the grave, and its duration for ever. Fret not yourself on account of your want of riches and distinction. What are these, in all their diversity and accompaniments, but fleeting shadows, compared to the *enduring substance* which is reserved for you in these sacred abodes of light and love, to which, in due time, you shall be admitted, if you persevere to the end. Here all your ills will be forgotten, and your sufferings shall end ; here your virtuous endeavours will be crowned, and your best expectations be substantiated.”

THE CONCLUSION.

OUR situation between the past and the future, necessarily connects us with both. The state we now occupy, renders us dependent on all the scenery with which the organic frame is principally conversant; but still our best desires will launch into the regions of invisibility. We cannot then conclude our speculations more properly than by contrasting the objects of sense with those of faith.

Though we are too apt generally to sit down content with our present condition, the future will engage some of our consideration. In ordinary life, what is all the

business and study of man, but a preparation for some distant season, wherein he hopes to reap the fruit of his labour, and to enjoy a rich harvest to crown his abundant cares? Frequently disappointed, and sometimes mortified with a result contrary to what he had expected, hope still impels him forward, and new prospects are presented to his imagination by the illusive power of vanity. Thus he goes on from one period of life to another, increasing his anxieties, and forming fresh schemes, according to the deceptions which he has already experienced, and ending, after all the variety and industry of his sanguine determinations, in *vanity and vexation of spirit.*

All nature is full of instruction upon this subject, and presents throughout her works an illustration of the important, but little-

heeded truth, that every thing is mutable here below. What we call our own, and those objects around us with which we hold the most familiar acquaintance, perish in the use ; and no man, however sceptical he may be with regard to the truths of religion, will dare to deny the evidence of his senses. Not only powerful empires have sunk into oblivion, and the most stupendous works of art been swept into the gulf of destruction ; even mighty rivers have shifted their beds and become shallows, and vast mountains have presented manifest proofs of revolution and decay. While, then, we are looking forwards ourselves with a certain, though trembling, assurance of our own dissolution, and while we behold on all sides the manifest traces of change, why should it be deemed incredible that the earth itself will die, and give place to another state of

things? Time, the measure of the mundane system, compared with the immensity of the universe, is but as the span's breadth of man's existence, to the eternity that is expanded before him! Fluctuation is perceptible in every part of Nature which comes under our inspection; and though our contracted period and narrow observation, prevent us from seeing with equal clearness the changes which take place in the whole system, there can be no just ground to suppose, that a frame is immutable which is made up of materials continually altering their situation and appearance.

But what reason leads us to conclude from inquiries and experiments properly conducted, revelation stamps at once with the unerring decision of its Divine Author. The Holy Scriptures make it throughout a

prominent object to convince us of this great truth, that all visible things are mutable, and that the succession of time is only a stream which leads us to eternity. They describe the creation of the world, and give the only faithful account of the history of man, and of the origin of evil. The same oracles carry our view forward to the end of time, and present us with the tremendous scene of the dissolution of the world.

When we open the Sacred Volume, we are gratified with the sublime spectacle of the earth rising out of chaos; the darkness which covered its bosom dispelled by a word; the disorder which raged among the elements reduced into a system of obedience and usefulness, and the whole mass assuming so glorious a form, and performing its revolutions with so much order,

as to cause the morning stars to sing for joy.

Natural evil, however, the certain effect of moral obliquity, soon changed the aspect of creation, and the earth suffered, as a punishment for human transgression.

The divine justice and wisdom fixed an indelible impression on our globe, to convince us of the change which it has undergone, and innumerable are the vestiges which it bears in every region, of the visitation of God. These monumental inscriptions, if we may so term the remains of the antediluvian world, are strong indications of the mutability of the earth: and as they strengthen the scriptural history of the primitive world, so do they confirm the truth of the prophetical declarations which determine the manner of its dissolution. Esti-

mating, indeed, the magnitude of objects by our senses, and measuring the duration of things according to our judgment of time, we may be inclined to think that the divine predictions are expressed in too limited terms, to warrant a literal interpretation; because the sentence therein pronounced against the world has not yet been executed. But let it be observed, that this very perversion of the divine predictions concerning the end of the world, by those who will be the most nearly concerned in their accomplishment, has been expressly foretold. St. Peter declares, that *in the last days scoffers shall arise, saying, where is the promise of his coming? for since the fathers fell asleep, all things continue as they were from the beginning of the creation**. But as the same inspired

* 2 Pet. iii. 4, 8.

writer justly argues, in the view of Omnipotence, *one day is but as a thousand years, and a thousand years as one day.* He then proceeds to describe the conflagration, in language corresponding with that of Isaiah; but he adds, that this awful event will happen in a manner as sudden as the circumstances will be terrible; it shall steal upon the inhabitants of the earth when they are sunk in a state of confident security and infidelity. It is true, that in the last days, *perilous times shall come*, when great distractions and commotions will prevail over the world, and produce a general distress of nations. This turbulent state, however, will most probably subside into one of calmness and temporal prosperity, when the world will fall into a moral lethargy, and an indifference to the divine judgments and prophetic denunciations. Then shall come the

end of all things, like a thief in the night, when the heavens shall pass away with a great noise, and the elements shall melt with fervent heat.

Such is the doom which awaits our globe, according to Scripture ; and against the manner of it as there described, nothing can be alleged on philosophical grounds. Much might be said upon this subject ; but where the time and causes are necessarily hidden, it would be presumption to explore and folly to explain. Thus much indeed is certain, that the constitution of nature, as far as is now known, is favourable to the plain declaration of Holy Writ concerning the dissolution of the world ; and it is not a little observable, that the modern discoveries in chemical philosophy, though they have not been improved in this light, do yet afford a powerful illus-

duces the most stupendous objects with which we are acquainted to insignificant points ; the earth itself shrinks to an atom, and the mightiest nations, with all their splendid achievements, are but the ephemera of an hour, or like the animalcula which the microscope helps us to behold in a globule of water.

How properly then does the Psalmist teach us to improve this sublime consideration of the celestial world, into a lowly estimate of ourselves, and a devout gratitude to that goodness, which from the heights of infinite excellence, glory and power, condescends to regard the children of the earth, to hear their prayers, to supply their wants, and, what is still more wonderful than all, to crown them with everlasting salvation !

When I consider the heavens the work of thy fingers, the moon and the stars which thou hast ordained, what is man that thou art mindful of him, and the son of man that thou visitest him?*

Compared with the extent and splendour, the power and duration of the state above us; of that region which is emphatically called “ his Father’s house,” by him who came to bring LIFE and IMMORTALITY to light through his gospel, all terrestrial things become a bubble; they fade away into vapour, and are dispelled by the rays of the morning.

Let us then, who are the heirs of such an eternal weight of glory, be careful not

* Psalm viii. 3, 4.

to look or anxiously regard the things which are seen, but the things which are not seen; *for the things which are seen are temporal; but the things which are not seen are eternal**.

* 2 Cor. iv. 18.

THE HEAVEN OF HEAVENS.

Into the heav'n of heav'n I have presum'd
An earthly guest, and drawn empyreal air.

MILTON.

THESE elevated and stupendous scenes direct our contemplations to that sublime retreat, appropriated by our Heavenly Father for the future and everlasting accommodation of his universal family. This is the centre of supreme attraction to the human heart, the ultimatum of our purest and best inclinations, the fruition of our highest hopes, and the completion of that happiness to which our

nature in all its organs, energies, and faculties, habitually tend.

An object of such importance to creatures formed and situated as we are, must be interesting above all others; since, to purchase and prepare it for our reception, the great work of redemption was accomplished, with all the wonders and miracles of mercy which distinguished this exceeding love of GOD to mankind. And to give us all the information concerning the nature, inhabitants, and enjoyments of that celestial world we are capable of acquiring, revelation describes it under various sensible qualities admirably adapted to our slow apprehensions, and demonstrating at the same time that it is the seat of consummate perfection and felicity to our corporeal as well as mental faculties.

The perceptible quality of altitude is frequently applied in Scripture to the future abode of the blessed ; it is superior to all the regions in the universe of God. We read that heaven is high above the earth, and that the holy Apostle, when he was favoured with a view of glories which could not be described, was “ caught “ or rapt up by the spirit into the third “ heavens.”

Strictly speaking, there is no such thing as above or beneath, high and low. These, and other synonymous terms, can have no meaning but in relation to the globe we inhabit, and as they are restricted by localities which bound our present situation.

All approximation to excellence and perfection we usually measure by the same terms, and heaven may well be called the

highest place in the universe, because it is the best. Were this holy habitation of the righteous less remote, we might think it too easy of access ; and were it represented as wholly immaterial, might it not appear either too equivocal to be credited, or too spiritual to be realised ? But to suit our mixed nature, and accord at once with the cognizance of sense and the testimony of faith, it is neither wholly disclosed nor altogether concealed. Thus hope is substantially animated by locality, and the profound research of reason and science affords additional validity to the evidence of what has been explicitly revealed.

We know so little about the real essence of matter, or the essential qualities of bodies, that no perfect definition of either can be given. Now, what is so remote from all intelligence derived from our

senses, as the empyreal heavens ? What can we know of what is revealed to us as a matter of assured hope, and concerning which it is said, that *eye hath not seen, nor the ear heard, neither hath it entered into the heart of man to conceive the things which God hath prepared for them who love him?*

Heaven is, notwithstanding, represented to us as capable of corporeal residence. We read of Enoch's translation to heaven, nearly as soon as our world began ; and Elijah the prophet, so famous for his zeal, was manifestly carried up into heaven in a chariot of fire.

These events, however miraculous and extraordinary, were certainly designed as demonstrative evidences of a separate state, and they as fully prove that our earth,

thus relinquished by these men of God, is not so substantial and lasting as that to which they ascended.

Many bodies of the saints, we are also told, came out of their graves at the crucifixion of our Saviour, and were probably among his retinue to glory when he ascended up on high. And the bodies of Christians, which at the last day shall be raised and made like unto Christ's glorious body, are destined to enter with him into the immediate presence of his eternal Father, that where their head and representative is, they may be also.

Heaven, therefore, as a place actually prepared for human creatures, must be an appropriate receptacle for them in their compound natures of matter and spirit. The former, of which our present temporary

tabernacles are composed, will indeed be changed into the latter, so far as may be necessary to fit them for inhabiting and enjoying a seat in the kingdom of **God**.

We shall then be entirely removed from every thing gross and mortal, sensual, animal, and earthly. But there is no authority for supposing that we shall also be divested of motion, gravity, and other material qualities.

The resurrection will be a renovation of the human structure, and a re-establishment of our best capacities of enjoyment. Organic life must in consequence be restored in full perfection, and the visible intercourse and communion of the holy angels, and the glorified bodies of saints in light, will be an addition to the happiness of both.

But the extent of this glorious habitation, or rest which awaiteth the children of God, must be in proportion to the magnitude of that wisdom which planned, and that grace which accomplished, their redemption.

When we behold a magnificent palace, we expect to find such variety in the dimensions and decorations of the apartments, as accord with the station, distinction, and character, of those who occupy them. The future destination of the righteous is called *a house in which there are many mansions*; and we have no reason to disquiet ourselves with an apprehension that any of these are narrow or desolate.

Wherever we have access to the knowledge of Nature and her works; that is, as far as our limited capacities go, we meet

with nothing useless or waste. No scene seems empty, no space altogether void ; there is nothing in the fabric of animate or spiritual existence, supernumerary or superfluous.

This economy, which does nothing in vain, doubtless extends its wisdom and care through all the systems which lie beyond us ; and if the extremities abound with inhabitants, how much more abundant must they be in the interior ? If the remotest provinces be full, the metropolis of the empire cannot be thin ; if countless multitudes crowd the precincts of Creation, what hosts of enlightened and glorified creatures must possess those regions which are replenished and enriched with all that can delight the mind without satiety, and employ its faculties without fatigue !

Surely, if every part of the material Creation is thus prolific, and continually contributing to the production and support of beings of various capacities and different degrees of duration, the “heaven of heavens,” the seat of superior intelligence and endless bliss, is not the receptacle of a party, as bigotry decrees, nor so contracted and impervious a region as superstition would represent. No: reason, judging from observation of the divine goodness, which is in constant exercise upon all the works of GOD, kindles a more enlarged sentiment; and the Author of our salvation confirms it by the declaration, that the righteous nations, or the redeemed from among men, will be innumerable, and that their abode will be as capacious as the circle of the universe. They shall come, says Christ himself, *from the east and from the west, from the north and from the*

south, and shall sit down with Abraham, Isaac, and Jacob, in the kingdom of God. Thus also the Psalmist, in a direct prophecy of the Messiah, and of the extent of his glorious kingdom, compares the righteous, who are the purchase of his redemption, to drops of dew that sparkle on the bosom of the morning.

Look back on all those ages that are past, and have rolled away in long succession ever since time began: what colonies, one after another, may we not believe, in all this vast interval, have obtained a settlement on the blissful shore from every region under heaven?

Look around on all the quarters of the globe, what a company, even in this evil generation, are still pure amidst corruption, and who keep their garments clean.

from the contagion which spreads its baleful influence all around and among all ranks?

Few and contemptible as they may appear to their insensible cotemporaries, they are sprinkled more plentifully than we are aware, among all climes and kindreds, tongues and nations, as the salt of the earth, who keep us, ill as we are, from growing worse, and shining among us as lights in a dark place, and who are in fact the props of a tottering world!

Look forward to millions yet unborn, who will rise up from time to time, as patterns and blessings to the latest ages, with minds enlightened by the knowledge of God, and hearts full of zeal, to perform his service; when distant nations shall rejoice in him, and call him blessed; when to him

shall be the gathering of the people, who from the four winds of heaven shall flock to him as doves to their windows, and when the glory of the latter ages shall be realised in the day of the manifestation of the sons of God !

But where is this paradise or place of supreme excellence and beauty? Is it in any quarter or recess of this ample universe, or does it not more probably encompass the whole? Who can furnish us with a map of its contents, or a chart of its latitudes and bearings; who can delineate its beauties, explore its resources, survey or define its boundaries?

By the discoveries of modern philosophy, and the aids which invention has supplied to the means afforded us by Nature for exploring the recesses of the higher re-

tration of the great revealed truth, that this *earth and visible heaven shall pass away, and their place be seen no more**.

What a subject for contemplation is here expanded before us, and how forcibly does it impress the mind with a sense of the vanity stamped upon earthly greatness! All created excellence fades away like a vapour, when we behold the terraqueous globe disappearing like a bubble upon the mighty waters, and leaving no perceptible blank in the universe. Here let us close our observations in the language of a masterly writer, but previously calling the attention of every reader to the apostolical exhortation, *seeing then that till these things shall be dissolved, what manner of persons ought ye to be in all holy conversation and godliness.*

* Luke, xxi. 33. Rev. xx. 11.

“ Let us now, to take leave of this subject, reflect upon this occasion on the vanity and transient glory of all this habitable world ; how by the force of one element breaking loose upon the rest, all the varieties of nature, all the works of art, all the labours of men, are reduced to nothing : all that we admired and adored before as great and magnificent, is obliterated or vanished ; and another form and face of things, plain, simple, and every where the same, over-spreads the whole earth. Where are now the great empires of the world, and their great imperial cities ? their pillars, trophies, and monuments of glory ? Shew me where they stood, read the inscription, tell me the victor’s name. What remains, what impressions, what difference or distinction, do you see in this mass of fire ? Rome itself, eternal Rome,

“ the great city, the empress of the world,
“ whose domination and superstition, *an-*
“ *cient* and *modern*, make a great part of
“ the history of the earth; what is become
“ of her now? She laid her foundations
“ deep, and her palaces were strong and
“ sumptuous; *she glorified herself; and*
“ *lived deliciously; and said in her heart,*
“ *I sit a queen and shall see no sorrow.*
“ But her hour is come; she is wiped
“ away from the face of the earth, and
“ buried in perpetual oblivion. But it is
“ not cities only, and works of men’s hands,
“ but the everlasting hills, the mountains
“ and rocks of the earth, are melted away
“ before the sun, and *their place is no*
“ *where found.* Here stood the Alps, a
“ prodigious range of stone, the load of
“ the earth, that covered many countries,
“ and reached their arms from the Ocean
“ to the Black Sea; this huge mass of

“ stone is softened and dissolved like a ten-
“ der cloud, into rain. Here stood the
“ African mountains, and Atlas with his
“ top above the clouds ; there was frozen
“ Caucasus, and Taurus, and Imaus, and
“ the mountains of Asia ; and yonder, to-
“ wards the north, stood the Riphæan hills,
“ clothed in ice and snow. All these are
“ vanished, dropt away as the snow upon
“ their heads, and swallowed up in a red
“ sea of fire. *Great and marvellous are*
“ *thy works, Lord God Almighty ; just*
“ *and true are thy ways, thou King of*
“ *Saints. Hallelujah*.*”

* Dr. Burnet's Theory of the Earth, b. iii. c. 11.

NOTES.

Page 20, Note [a]. The illustration of the stone and the watch, in the state of the argument with which this masterly performance opens, was adopted and urged against atheism by that great and good man Sir Matthew Hale, in his “ Primitive “ Origination of Mankind,” folio, 1661. Dr. Paley, however, has carried on the argument, and branched out the proofs, in a manner peculiar to himself. His work is unanswerable ; and it has the merit of giving entertainment, and affording scientific instruction, while it is establishing in the mind the fundamental principles of Natural Theology. The chapter on astronomy is not equal to the rest of the book ; but happily, what Paley left imperfect upon this subject has been supplied by Professor Vince, in his four excellent discourses preached before the University of Cambridge, and printed under this title: “ A Confutation of Atheism, from the Laws “ and Constitution of the Heavenly Bodies ;” 1807.

Page 20, Note [b]. The celebrated foundation of Mr. Bampton has produced many important works in defence of Christianity ; and it were to be wished that a good abridgment of the whole series was undertaken by some able hand, somewhat in the manner of Burnet's Abridgment of the Boylean Lectures. Few theological performances of modern times will be found on examination to equal, and unquestionably none can be said to excel, the Discourses of Professor White, the *Horæ Mosaicæ* of Mr. Faber, and the “View of the Evidences of Christianity at the close of the pretended Age of Reason, in eight Sermons preached before the University of Oxford in 1801, at the Lecture founded by the Rev. John Bampton, Canon of Salisbury, by Edward Nares, M. A. late Fellow of Merton College.” This last work is a complete refutation of deism, and the notes subjoined to the sermons are a magazine of erudition, bringing together all the objections of modern infidelity, and overthrowing them by invincible arguments.

Page 27, Note [c]. The golden age of the ancients, is too palpable a representation of a primi-

tive state of innocence, to have originated in the fertility of imagination. Nothing in nature or analogy could have given birth to such a fable ; and yet, according to the first record of the history of man, we know that a state somewhat similar to what the poets have described, actually had an existence upon our globe, though the period of its duration was probably contracted within the space of a few days. But the remembrance of the paradisaical innocence and happiness, must have formed one of the tenderest sentiments of our fallen parents, and no doubt it engaged much of their discourse, whence the traditional memorial naturally passed downwards through the various branches of their posterity, and was heightened and illustrated by many fictitious circumstances in its progress, till the simple truth was lost in the exuberance of poetical ornament.

Page 34, Note [d]. The degree of knowledge given to man before the fall, must have been in proportion to his wants, and it is certain that he had an intuitive acquaintance with Nature, which cannot now be attained but with extreme labour and continual application. We read, that he gave

names to the different classes of animals, immediately upon their being arranged in his presence. After his expulsion from Paradise, and when his family increased considerably upon the earth, various inventions took place, which required a thorough intimacy with the elementary principles and actions of natural substances. The wickedness which contributed to the destruction of the antediluvian world, was aided by the discoveries of science and the elegancies of art. And after that great event, and the establishment of a new race, we find that mankind were well acquainted with architecture, and had no mean knowledge of the arts connected with jurisprudence and government.

Page 39, Note [e]. No person of any judgment would hesitate between the opinions of Longinus and Voltaire, upon the subject of literary composition. The candid Grecian has given his voluntary testimony in behalf of Moses as a writer, while the pertulant French sciolist, who was equally ignorant of Hebrew and theology, has endeavoured to disparage what he did not understand. In proportion as language and philosophy are studied in their principles, so will the Sacred Writings arise in

estimation ; and it may be safely asserted, because it is easily proved, that all the discoveries of modern science have served to confirm the truth of the Mosaic history.

Page 57, Note [f]. It is now known, that water and air are convertible into each other ; wherefore, considering the immensity of the atmosphere, and its continual activity, it is not unreasonable to suppose, that these changes are regularly going on therein, and producing rain, dew, and various other phenomena. Who, then, after attending to the present state of chemical knowledge, will find a difficulty in the Mosaic history, where it is said, that *God made the firmament, and divided or separated the waters which were under the firmament from the waters which were above the firmament ?*" As long as it was believed that air and water were unchangeable elements, this passage, no doubt, was hard to be understood ; but since we are acquainted with the constituent principles of both, the sacred history is found to be philosophically correct.

Page 137, Note [g]. When the tribes of men multiplied, and the sense of true religion propor-

tionally decayed, superstition converted the original rites of devotion to the honour of visible objects. Hence sacrifice, which was of divine origin, and had unquestionably been observed in Paradise, as well as the institution of the Sabbath, became the means of propitiating the celestial influences. The heavenly bodies were regarded as the seats of superior intelligence, the presiding powers of which took an interest in the characters and affairs of men. This introduced polytheism and judicial astrology, with the innumerable vanities of amulets and talismans, oracles and auguries, so general among all the nations of antiquity.

Page 139, Note [h]. The curious book here alluded to, was originally published in 1714, with the title of “ An Inquiry into the Nature and Place “ of Hell. Shewing, 1. the Reasonableness of a “ Future State; 2. the Punishments of the Next “ Life; 3. the several Opinions concerning the “ Place of Hell; 4. that the Fire of Hell is not me- “ taphorical, but real; 5. the Improbability of “ that Fire’s being in or about the Centre of the “ Earth; 6. the Probability of the SUN’s being the “ Local Hell, with Reasons for this Conjecture,

“ and the Objections from Atheism, Philosophy, “ and the Holy Scriptures, answered. By Tobias “ Swinden, M. A. Rector of Cuxton, in Kent.” After the author’s death, the publisher sent out a new edition, with a very unwarrantable addition to it, called a Supplement, in which an attempt was made to invalidate Mr. Swinden’s arguments on the eternity of Hell torments; 8vo. 1727.

Page 141, Note [i]. According to Dr. Herschel, the elastic fluid which constitutes the atmosphere of the sun, is more or less lucid and transparent; and that this luminous matter is what furnishes us with light. In elucidating this subject, which he does by analogy, he makes the following observation on the production of the clouds in our atmosphere: “ These are probably decompositions of the elastic fluid of the atmosphere itself, when such natural causes, as in this grand chemical laboratory are generally at work, act upon them.” “ The extent of our own atmosphere we see is still preserved, notwithstanding the copious decompositions of its fluids in clouds and falling rain, in flashes of lightning, in meteors, and other luminous phenomena; because there are fresh supplies

“ of elastic vapours continually ascending to make
 “ good the waste occasioned by those decomposi-
 “ tions.”—*Philosophical Transactions* for 1795.
 The same accurate observer concludes, that the sun
 is not a body of fire, but an inhabited globe, more
 desirable than our own.

Page 217, Note [k]. This was the position of the learned but eccentric Whiston, who, in his “ New Theory of the Earth,” very ably refuted many visionary conceits advanced by Dr. Thomas Burnet in his elegant Theory; but at the same time, Whiston fell into others of equal absurdity, which were completely exposed by Dr. Keill, in his examination of both works.

Ibid, Note [l]. It is really astonishing that men who, in every thing else, will be guided by nothing but actual demonstration and experiments, should have recourse to the wildest conjectures and the most extravagant hypotheses, for no other end than merely to get rid of the Sacred History. Thus; however, it is with respect to the theories which have been fabricated by the geological deists, in order to overturn, if possible, the plain and intel-

ligible account of the creation given in the book of Genesis. Buffon, in many respects an excellent observer of Nature, and a writer of great merit and elegance, evidently with the design of invalidating the Mosaic history, hazards the absurd notion, that the earth and the other planets are parts struck off from the sun by the collision of comets ; and that when our globe assumed this form, it was in a state of liquefaction, from the nature of the body to which it originally belonged. Now, not to insist upon the circumstance already noticed, that the solar orb is not a fiery mass, thus much is clear against this hypothesis, that if the planets were struck off from the body of the sun, they would unavoidably have fallen back to the same body again, thus completing their revolution in one course.

By another set of philosophical unbelievers, the truth of the Mosaic history has been attacked upon the ground, that the state of the earth proves its antiquity to be much greater than the æra of the creation which is laid down in that account. According to Brydone, the Canonico Recupero who was engaged in writing the history of Mount Etna, discovered a stratum of lava which flowed from that

mountain, in his opinion, at the time of the second Punic war, or about two thousand years ago; this stratum is not yet covered with soil sufficient for the production of either corn or vines: "it requires "then," says the Canon, "two thousand years, at "least, to convert a stratum of lava into a fertile "field. In sinking a pit near *Jaci*, in the neighbourhod of Etna, they have discovered evident "marks of seven distinct lavas one under the other, "the surfaces of which are parallel, and most of "them covered with a thick bed of rich earth. Now "the eruption which formed the lowest of these "lavas (if we may be allowed to reason," says the Canon, "from analogy), flowed from the mountain at least fourteen thousand years ago."

Such is this formidable objection to the sacred history of the Creation, as given us by Brydone in his Travels; and it is refuted with great ability by Bishop Watson, in his *Apology for Christianity*: but the arguments of the learned prelate might have been spared, for the whole tale is a fictitious invention of the traveller; the Canon Recupero having publicly denied that he ever gave Brydone any such account (see Mr. Kirwan's *Geological Essays*, page

107). But the enemies of righteousness, in their restless opposition to the truth, have since espoused the romantic legends of the East, to invalidate the authority of the Hebrew Scriptures ; and while they stretch their scepticism to the utmost, in order to recede from the only genuine history of the origin of the world and of man, they will eagerly swallow the most extravagant pretensions of the Chinese and the Hindoos, without being able to comprehend them, or to reduce them to any thing like historical and mathematical certainty. It is some consolation to the plain and sincere believer of the Bible, that amidst all this vehement opposition to the foundation of his faith, the gainsayers themselves are not agreed in any common system of their own to be established in its room ; nor, while they are so earnest to prove the high antiquity of the world, have they any principles to account for its origin, or the time of its commencement.

Page 237, Note [m]. The fact of the succession of plants, perfectly accords with the sacred account of the original constitution of the vegetable world. That history asserts that all plants were

formed, each containing its seed for the perpetuation of the species ; and this is confirmed by observation. The juice of the earth may nourish a plant, but that is the utmost of its operation ; the Almighty alone was capable of forming the matter which constitutes all bodies, and he only could extract out of this matter several elements, each of which is perpetually the same, notwithstanding their different combinations form an infinite variety of bodies. The elements may indeed make mutual approaches, and intermingle with each other, but the result will be no more than a heap of confused masses—there will be neither organs, nor life, nor soul. Let us suppose the earth to be newly created, it will for ever continue naked and barren, if it be not arrayed and peopled by the Deity. He alone can organize bodies, and animate such organized species, as plants and animals. The minutest sprig of sorrel or chervil is formed, like all the rest of the creation, by a particular plan and a special will. As to the manner of perpetuating animals and trees after their first formation, the Deity might either determine to create more, whenever it should be necessary to substitute a new one in the room of another that age

had decayed, or he might at once provide for all successions of ages, by enclosing, in the seed of the first tree, all its posterity in miniature; so that each species must unavoidably produce its own resemblance, and the earth would be only charged with a contribution of juices necessary to nourish and unfold the seed: and, indeed, this is the magnificent order he has been pleased to establish. The imagination is astonished, to find millions of seeds involved in one another: but reason teaches us to receive the fact without hesitation, because the great Creator is omnipotent. See *Spectacle de la Nature*, vol. i. *Derham's Physico-Theology*, and *Ray's Wisdom of God in the Creation*.

Page 277, Note [n]. This doctrine of a plurality of worlds has been rejected by some, on the supposed ground of its being contrary to the Scripture; while others again have purposely adopted and made use of it, as an argument to invalidate the truth of the Mosaic history, and to disprove the scheme of redemption contained in the Christian revelation. The scruples of the one and the objections of the other, are equally fallacious. The silence of the Sacred Writings on the subject proves

nothing ; for as Bishop Wilkins justly observes, “ the negative authority of Scripture is not pre-
 “ valent in those things which are not the funda-
 “ mentals of religion ; and 'tis as probable,” he
 adds, “ that the Scripture should have informed us
 “ of the planets, they being very remarkable parts
 “ of the Creation ; and yet neither Moses, nor Job,
 “ nor the Psalms (the places most frequent in astro-
 “ nomical observations), nor any other Scripture,
 “ mention any of them but the sun and moon : be-
 “ cause the difference betwixt them and the other
 “ stars was known only to those who were learned
 “ men, and had skill in astronomy. Now if the
 “ Holy Ghost had intended to recal unto us any
 “ natural secrets, certainly he would never have
 “ omitted the mention of the planets, which do so
 “ evidently set forth the wisdom of the Creator*.”

From the silence of the Scripture, therefore, no-
 thing can fairly be inferred against the received
 system of astronomy, or the doctrine of a plurality

* Bishop Wilkins's “ Discovery of a New World ; or, A Dis-
 “ course tending to prove, that ('tis probable) there may be
 “ another Habitable World in the Moon.” Fifth edition,
 page 17.

of worlds ; because the obvious design of revelation is, to teach us truths of another kind, and “ ‘tis not “ the endeavour of Moses or the Prophets to discover any mathematical or philosophical subtleties, “ but rather to accommodate themselves to vulgar “ capacities*.”

In a collection of wise sayings, entitled *Walpoliana*, the late Lord Orford is represented as urging an objection against Christianity, on the ground that if there are more worlds than one, the doctrine of redemption cannot be true. This notable argument, if so it may be called, must certainly have been started in a playful humour, and thrown purposely in the way of the relater as being a lover of paradoxes. Probably Horace Walpole at that moment had the royal counsel in his mind, *answer a fool according to his folly, lest he be wise in his own conceit.* The gleaner of anecdotes and table-talk has published the ridiculous remark, without stating the conversation which preceded it.

But in fact, the doctrine of a plurality of worlds,

* Bishop Wilkins, p. 18.

instead of weakening our faith in revelation, makes us rejoice in it; and the consideration that all the splendid bodies in the universe are the seats of intelligent beings, makes us feel the full force of the Psalmist's rapturous exclamation: *When I consider the Heavens, the work of thy fingers, the moon and the stars which thou hast ordained, what is man that thou art mindful of him, and the son of man that thou visitest him!* That revelation which we prize as our best guide, and the redemption which we embrace as our inestimable gift, elevate our minds to other worlds, and to the numerous mansions which are in our Father's house, all replenished with active intelligencies, some in a state of probation like ourselves, and others receiving the rewards of their faith and righteousness; for according to the Apostle, *there is one glory of the sun, and another glory of the moon, and another glory of the stars; for one star differeth from another star in glory.*

THE END.

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